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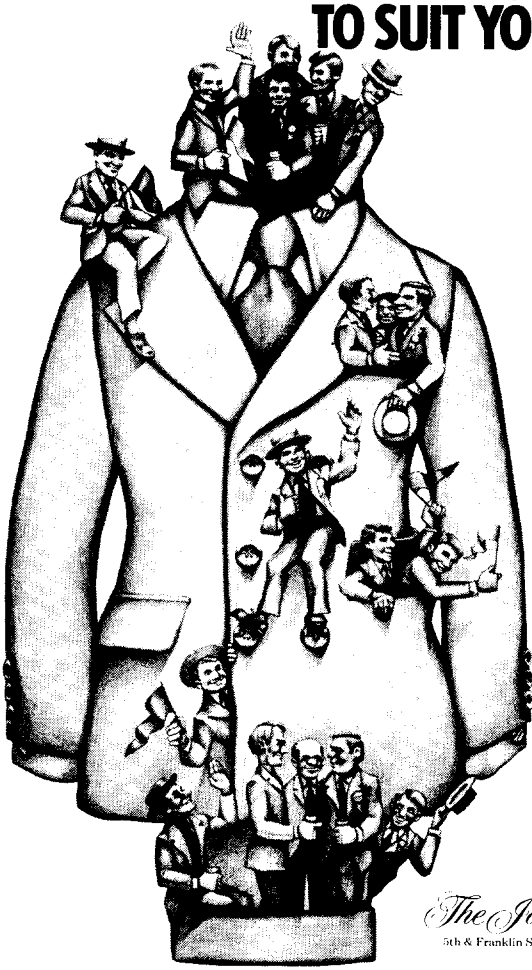

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The Declaration of Independence

A Case Study in Preservation

Verner Clapp

Council on Library Resources, Washington, D.C. 20036

■ The travels and tribulations of the Declaration of Independence are of particular interest in this period of the American Revolution Bicentennial. They are described, with emphasis on the history of its preservation.

THE DECLARATION of Independence is one of the most abused documents in the history of preservation of documents. It has been battered and banged from its birth. It was not even an excellent sheet of parchment to begin with; apparently it was a home-made (colonial-made) piece of parchment found fairly quickly in the markets of Philadelphia. The Continental Congress had announced the Declaration on July 4; the order for the engrossing of the Declaration was not given until July 9; and in early August it was ready for signing, and most of the signing took place on August 2, 1776. A number of the members were absent, however, so in succeeding days the parchment was pulled out, unrolled, signed and rolled up again. Also, it was wartime, and the Continental Congress was a mobile Congress. It was ready to get out of Philadelphia on a moment's notice, and it did so. It went to Baltimore and Annapolis, to York, Pennsylvania, and to Trenton, New Jersey. One can only imagine that such items as the Declaration were probably stuffed into a barrel and carried off in a cart, through all types of weather.

In 1800, the document finally arrived in Washington, D.C., and even then it did not remain in one place. It moved with the State Department until 1814, when the British came, and it was thrown into a linen bag with many other documents and was hauled to Virginia where it was put in a barn in Leesburg. It returned to Washington where curiosity-seekers looking at it found it very dim and decrepit.

John Quincy Adams decided that it had to be printed in order that its contents be available to the American public, so W. J. Stone took a wet-pressing from it in order to make his famous facsimile. The document has never quite recovered from that wet-pressing.

In 1841, the Secretary of State decided that it ought not to be kept in his office and pulled out occasionally for viewers. It ought to be kept where everybody could see it, so he permitted it to be hung in the Patent Office, and there it hung on a wall opposite a tall window from 1841 to 1876. In 1876, it was taken to Philadelphia and hung in Independence Hall for about six months.

First Thoughts on Preservation

Brought back to Washington, its decay demanded attention and a committee was established. Meanwhile, the Secretary of State took it back to the Department of State and put it on exhibition in the library there. In 1880, the committee became active and asked the National Academy of Sciences to study the matter. The National Academy of Sciences appointed a committee, with Walter Gibbs of Yale as chairman. He was an inorganic chemist, principally a metallurgist. Two other notable chemists served on the committee, one of whom was Charles F. Chandler of Columbia. A man of varied interests, he was the founder of the School of Mines at Columbia, in addition to being a public health chemist with the appropriate organic chemical interest.

The committee decided it was not expedient to restore the document and that the best thing to do was to keep it out of light. The State Department therefore took it off exhibition, but they did not keep it out of the light. In 1894, they finally put it into a frame between two pieces of glass and put the frame out of light.

In 1903, the State Department began again to worry and again called upon the National Academy of Sciences, which again appointed a committee, this time headed by Professor Chandler of Columbia. There was at least one librarian on this committee—John Shaw Billings—at that time librarian of the Army Medical Library in Washington. Billings, although a librarian, had a specialty in medical bibliography. It is apparent that when it came to restoration of important national documents in the 19th century, there was no restoration profession upon which to call.

The new committee examined the documents carefully, and stated that they found no evidence of mold or of other causes of disintegration, that it was unwise to treat or attempt to restore, and recommended that it be kept in the dark and as dry as possible. The State Department followed the recommendation. However, by 1919, the State Department began to feel that possession of this document was a nuisance. People insisted on seeing it, and if they couldn't see it informally, they would get letters from important people addressed to the Secretary of State to assure a private exhibition. The Secretary of State therefore decided to entrust it to somebody whose business it was to handle documents—the Librarian of Congress. The Secretary of State convened the committee (a committee of historians), and the committee decided that the document would suffer no more in the hands of the Librarian of Congress than it would in the hands of the Secretary of State, and recommended its transfer. And so, in September 1921, the document arrived at the Library of Congress.

At the Library of Congress

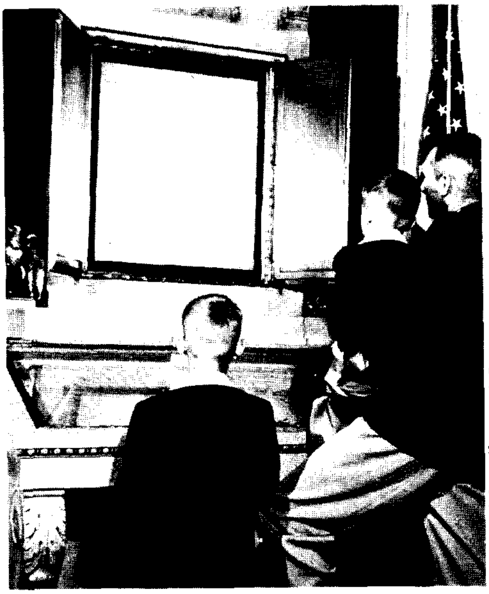
The Librarian of Congress immediately did several things. First he or John C. Fitzpatrick, Chief of the Manuscripts Division, made a very detailed description of the document. This has proved very useful over the years. He also had photographs made of the document. The Library of Congress at that time had no photographic department of its own, merely a photostat machine, so it called in Levin C. Handy, the son-in-law of Matthew Brady, who had previously taken a picture of the Declaration of Independence on the roof of the State Department building in 1903 at the suggestion of the National Academy of Sciences committee. He installed his enormous camera in the Librarian's office, and there made 18″ × 24″ glass negative photographs of both the Declaration and of the Constitution which had come to the Library of Congress at the same time. Unfortunately, these negatives have completely disappeared.

The Declaration Enshrined

The Librarian then had a shrine constructed—an elaborate marble exhibit case in the main exhibit hall of the Library of Congress against the west wall. It was a very appropriate place; however, the case now stands there vacant, because the documents have since been transferred to the National Archives. The case was completed in February 1924, and the documents were placed on exhibit at a ceremony attended by President Coolidge. The Librarian, Dr. Putnam, described the event as showing the emotional potency of documents animate with a great tradition.

The Declaration of Independence was mounted vertically above the Constitution which was mounted horizontally. In the Declaration's portion of the case, there was a mounted window containing two panes of glass between which was a yellow film. The document was inserted behind these panes of glass. To hold the document in place, it had to be suspended on a mount, and in order to get advice on this, Dr. Putnam again called on Mr. Fitzpatrick. Fitzpatrick recommended in writing, which still exists, that it would be appropriate to tip the document down upon a mount. As a result, the document was tipped down all around, not just in one or two places, on a mounting board and was inserted in place.

This happened in February 1924. For some 20 years thereafter, there were various alarms and excursions. Actually, the alarms started even before the document had been inserted in the exhibit case. The Constitution was horizontal, and one would expect to look directly over the case onto it. Visitors were allowed to walk right up to it and look through the glass into it. Even before it was in place, somebody saw a silverfish in the case. Remember that the case was made of marble—cut completely out of marble—and the glass on top of it was in a heavy bronze frame which fit ever so tightly and beautifully into the frame on top of the marble. The entire staff kept watch for silverfish. There was a continuous guard beside the documents in any case, but these guards watched out not only for thieves and saboteurs, they also watched out for silverfish. I doubt that any silverfish got in there again. An article appeared in the *Washington Post,* saying that a visitor to Washington had seen a bug in the case. The reporter from the *Post* who had printed the story was invited to the Library, and we opened the case and searched it, but there was no sign of any bug.



Courtesy The Library of Congress

On October 1, 1939, Dr. Putnam retired and was succeeded by Archibald MacLeish. Mr. MacLeish inherited, among other things, the Declaration of Independence and its headaches. On January 9, 1940, Mr. MacLeish had been in office three months when Captain Mulaney—Captain of the Guards—reported a crack in the upper right-hand corner of the document. The immediate custodian of the document was the Chief of the Manuscripts Division, Dr. St. George Sousa, a historian of some note, who was not very familiar with parchment.

The Tipping Released

Dr. Sousa made a long report dated January 12, 1940, and it is known that they released the tipping on that date. It was decided that the tipping had made a constraint on the parchment which had been allowed to expand and contract freely, resulting in the cracking. At this time, in 1940, in the threat of the splitting Declaration, Mr. MacLeish created a position—Keeper of the Collections—and appointed Alvin W. Kremer, who had been involved with the program for some time. The position has now expanded into that of Assistant Director for Preservation.

Mr. Kremer was very much a worrier and kept constant watch over the Declaration; nothing happened to it that he didn't know. He began a photographing program, and there are records of photographs made August 12–13, 1940, October 9, 1940, January 4, 1941, and November 18, 1941 among others.

At the same time, we entered into consultations as to what should be done with this document. After consulting with several prominent men, we chose George Stout, now Director of the Isabella Stuart Gardner Museum in Boston, and his associate, Mrs. Evelyn Ehrlich. Both he and Mrs. Ehrlich proved to be experienced, competent and cautious restorers. We also consulted the British Museum's experience with another document early in the century. Plans were made for repairing the document, for removing it from its case and for giving it whatever it needed to put it together again and keep it from splitting further.

On to Fort Knox

It was planned that Stout and Ehrlich should come to Washington in January 1942. But there was an interruption—the war clouds had been gathering. The Library of Congress had secured 40 cubic feet at the bullion depository in Fort Knox in which to store its most important documents. A bronze hermetically sealed case had been made to house the Declaration and four leaves of the Constitution, and then on December 7, 1941, Pearl Harbor was bombed. At this point, the decision was made to evacuate, but it was necessary to determine whether the Library of Congress had the authority to evacuate the Declaration of Independence. The Attorney General was asked, causing a delay of some days. Meanwhile, on December 18, Dr. Sousa addressed a note to the Librarian indicating that he had observed no new tears, but he noticed that the edges were curling. This, he said, must have been caused by releasing the tipping and the cold December weather. The exhibit case, remember, was against the west wall. The Library of Congress was not air-conditioned then, and thus it may be supposed that in spite of the fact that the document was in a case, it was still subject to temperature variations ranging from the 90's (Fahrenheit) in the summer down to room temperature in the winter, and to humidity variations again from the 90's (Relative Humidity) in the summer to perhaps 10 in the winter.

The bronze case was packed into an enormous thick oak box packed in rock wool. This was to protect it against fire, flood, etc. It was then bundled into a double compartment of a Pullman car accompanied by two Secret Service agents and myself. In this company it traveled to Louisville and there was picked up by a personnel carrier from Fort Knox and taken to the bullion depository and put into one of the lower dungeons where the relative humidity was approximately 59%. Plans for repair were not given up —they were just deferred—and in May 1942, there is an entry in my daily diary to the Librarian saying, "Preparations for repairing the document are complete. I shall meet Mrs. Ehrlich and Dr. Stout tomorrow morning. I intend to keep a close watch over the whole procedure and to maintain a careful record of everything done." And so, on the morning of May 13, 1942, I met Stout and Ehrlich in the railroad station at Louisville. We were taken to Fort Knox and went to the bullion depository. A few passages from my diary follow.

"The case containing the Declaration was taken from the vault and placed in a north room prepared as a workroom for the purpose. This room has tile walls and floor. Atmospheric conditions: dry bulb 76, Fahrenheit wet bulb 56, relative humidity 59%. The document was taken from the container. . . . May 14, work began approximately at 9 a.m. The document was removed from the vault and Dr. Stout and Mrs. Ehrlich made a detailed description of it. The document was then removed from its mount. This mount consisted of a heavy pulp board covered with a kraft type paper with a frame of green velvet glued on. This was to keep the board out from the glass and give the document room to move around in, we'll suppose. A strip of tissue paper about 3/4 of an inch wide was pasted with an adhesive, apparently part glue and part paste, on the mount in the form of a rectangle, the outer dimensions of which were the dimensions of the document. The document had apparently been at one time pasted down at the margin on this strip. It had, according to a report of the Chief of the Manuscripts Division dated January 12, 1940, been detached from the mount on that date. In places, however, it had re-adhered on the upper side and especially lower margins, while in other places on these margins the tissue was left adherent to the document instead of to the mount. Along the upper margin the document had in several places been fixed firmly into place with glue in an effort to stop the extending cracks. Practically the whole of the detached upper right-hand corner had been glued down in this manner, as well as the portion of the document surrounding the crack above the capital letter S in States in the heading. At one time also, about January 12, 1940 an attempt had been made to reunite the detached upper right-hand corner of the main portion by means of a strip of Scotch cellulose tape, which was still in place, discolored to a molasses color. In the various mending efforts, glue had been splattered in two places on the obverse of the document."

The result was that Stout and Ehrlich did an effective job of restoration.

The Bureau of Standards

Among the people that we had consulted were Dr. Scribner, perhaps the greatest living expert on paper, the head of the Paper Section of the Bureau of Standards. The problem was that he was the greatest living expert on *new* paper because a paper manufacturer never sees his product after it leaves the mill. Scribner and his associate, Weber, stood in front of the Declaration of Independence, looking at it. They stared at it for nearly five minutes without saying a word. Then Scribner turned to Weber and said, "Weber, what do you think?" In other words, this was something new to them, but it was what we had to depend on in 1940 for knowledge on how to treat important documents.

Discussions with the Bureau of Standards continued, focusing particularly on how to prevent further degradation. It was decided to encapsule both the Declaration and the Constitution in Thermopane in an atmosphere of helium, somewhat humidified. Now this, of course, offers a hazard because if the temperature of a humidified atmosphere drops, it can reach the dew point. So the Bureau of Standards manufactured a paper in its own mill to serve as an absorbent. This paper would, it was calculated and shown by experiment, in case of a drop in temperature, absorb the humidity and not permit it to precipitate on the document itself. Thermopane is two pieces of glass, separated by 1/4 or 1/2 inch and soldered around the outside. It is used as insulation. In this case, the interior was filled with helium. To prevent an accidental loss of helium which might not be suspected, an electrical device (the same device which is used to detect gasoline vapors in the holds of boats) was used, and it was constantly moni-

Alvin W. Kremer, center

Courtesy The Library of Congress

tored. Actually one of the Thermopanes did lose helium once because of a leak; it has been replaced. In September 1952, the documents were all placed in these helium capsules and later that same year, they were all transferred to the National Archives, where they still remain.

In Conclusion

Some conclusions may be drawn from this story. First, it is apparent that the topic of preservation has been neglected in the professional discussions of librarians. If such problems had been discussed properly at professional meetings, there would have been a body of literature, and there would have been people identified as having some expertise in the field. In fact, there might even have been some bases for training. Note that when the National Academy of Sciences was consulted, they brought in chemists, inorganic chemists at that. Only once was a librarian called in and he was not a specialist in document restoration. When the Library of Congress needed advice, it had to turn to its Chief of Manuscripts Division who was not a repairman either.

We need manuals; we need research. In the last 30 years, the principal research in this area has been done by Bill Barrow, to whom we owe the cylindrical laminator, the deacidification process, the history of all papers to tell us what happened, the development of a permanent durable paper, the work on the binding standards, the work on a permanent durable polyvinyl acetate adhesive. The Library of Congress has subvented some important work in the preservation of phonodiscs, but we need others. There is money for this, if adequate proposals could be made. We need proposals for research in this area. We need training. And there should be more jobs such as that of the Keeper of the Collections in the Library of Congress. Preservation must become an important and integral part of the profession.

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Mr. Clapp *is consultant, Council on Library Resources, Washington, D.C. He was a potent force in the Library of Congress during much of the history described here. From 1922/1947 he was Assistant, Manuscripts Division; Assistant, Reading Rooms; Director, Administration Department; Director, Acquisitions Department. In 1947 he was appointed Chief Assistant Librarian of Congress, a post he held until 1956. The paper was prepared from the transcript of Mr. Clapp's keynote speech presented at the New York Library Association's conference on preservation, during NYLA's annual conference on Nov 12, 1970.*

Book Budget Allocation

Subjective or Objective Approach

Bette Dillehay

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■ Budgetary control and financial management are keys to efficient utilization of resources invested in industrial libraries. While present methods of acquisition are geared to random selection of books based on user requests, such methods bear little relation to a balanced collection. A study was initiated to determine if an objective approach to budget allocation should be developed. Previous acquisitions were correlated with book circulation, books published, book costs and total research budget. The results indicate that acquisitions based on user requirements combined with a computer analysis of existing holdings produce a collection most valuable to the user community.

ON A BOOKSHELF in the office of most special librarians can be found such titles as *Technical Book Review Index, Guide to Reference Books,* and more specific titles like *A Guide to the Literature of Chemistry* or *Chemical Publications.* Beyond the doors of most special libraries are located the specialists who usually decide, without the aid of these tools, which books shall be purchased. The librarian has at hand the knowledge and technical skill to effectively establish and maintain a collection of books which would be most valuable to the user community, yet he usually functions in the passive role of filling requests. This constitutes book selection in an irresponsible manner, for the collection is subject to rapid imbalance should a particularly enthusiastic specialist fail to see the effects of his requests. It is difficult for such a specialist to perceive the needs of the institution within the framework of budgetary limitations. As specialization becomes narrower and the information explosion larger, individuals concentrate on smaller and smaller segments of knowledge. In addition such specialists become more and more certain that they alone are competent to choose titles in their field and reject the recommendations or suggestions of the librarian.

This is not to say that the librarian uses no discretion in book selection and orders whatever and whenever so directed, but unless a program is developed which establishes guidelines for collection control, the librarian is in a most vulnerable position. The objective of such a program should be to involve the librarian in the decision-making process and thus make the maximum use of the knowledge and skills developed through training and experience in library work.

Regardless of the origin of requests,

the librarian is usually responsible for setting budget amounts on an annual basis for book acquisition. Most textbooks offer the proposition that the book budget be based on the number of engineers, scientists or whatever in a company or institution. This figure, it would seem, bears little relation, however, to the number and cost of books being produced. The purpose of the library must be geared to the user in a realistic manner. The only relevant reality is the reality of the number and quality of books being produced. Naturally, a department with a larger staff complement will need more duplicate copies and may have a wider variety of research projects; however, ten research staff members working in a specialized area will need access to the same quantity of sources as one hundred.

Objective Standards Sought

The purpose of our study was to arrive at a more objective means of determining minimum standards and requirements and to establish a more balanced method of selection within each discipline served by the library. The crux of the problem seemed to be that traditional methods of book selection have become decreasingly viable and thus alternate means need to be developed. The emphasis must be on a method whereby research staff members and librarians can function together more effectively. Such a method will involve the knowledge and training of the librarian as well as the subject specialist. Before attempting such a union it is necessary to define what knowledge and skills can be brought into play by each (see Figure 1).

Contacting the Users

The first step was to establish categories of the various subjects (Figure 2) covered and to determine the areas most in need of development as this would dictate greater emphasis in future expansion. This initial phase of the project offered us the opportunity of approaching our users, enthusiastic and unenthusias-

Figure 1.

Librarian	Researcher
Awareness of tools to aid in book selection	Knowledge of the nature of the literature in his subject specialty
General awareness of needs of all fields of interest pertinent to library collection	Knowledge of classic works within his field
Comprehensive awareness of current publications	Ability to determine relative value of current publications

Figure 2. Subject Categories

Anatomy, Human
Anesthesia

Bacteriology/Immunology
Biochemistry
Botany

Chemistry, General
Chromatography

Gastroenterology
Genito-urinary

Industrial Medicine

Metabolism/Nutrition
Medical Research Techniques

Nervous System

Organic Chemistry

Pathology
Pediatrics
Pharmacognosy
Pharmacology, Clinical
Pharmacology, Experimental
Pharmacology, General
Pharmacy/Materia Medica
Physical/Theoretical Chemistry
Physiology
Psychiatry and Psychology
Public Health

Surgery

Teratology
Therapeutics
Toxicology

Veterinary
Virology

tic, with the idea of cooperative collection development.

Using the shelf list cards, holdings were divided into the categories established. Interdisciplinary works were placed either in the most heavily treated subject category or in multiple categories. These entries were then keypunched for computer processing. Basic reference information including author, title and imprint was punched along with category and type of book. (The types indicated included reference, texts, monographs, serials, proceedings, and annuals.) This information was printed out for each category alphabetically by type of book and copies were distributed to several members of the research group specializing in the subject covered. A memo explaining the project and eliciting their aid accompanied the list, along with a survey questionnaire which called for evaluation of the holdings and recommendations for expanded coverage.

Anticipating the return of questionnaires filled to the brim with recommended acquisitions, we attempted to establish priorities to be used for each subject for the final phase of acquisition. Knowing there are an infinite number of levels, we divided them into three categories:

1. Core collection—Those books which are considered essential regardless of the depth of research.
2. Collection to support basic research or to support ongoing program.
3. Collection to support advanced research on an in-depth basis.

As the questionnaires for each category were completed, conferences were arranged with the reviewers and members of research management concerned with each particular area of the collection. Here the purpose was to:

1. Describe the nature of the relevant literature in terms of the levels established and in terms of stress on current or retrospective publications, monographs, serials, and non-book materials.
2. Determine the extent of existing or projected research programs.

As we expected, most evaluations showed the reviewer considered the collection weak in his particular area. The majority of the surveys showed few actual suggested titles but rather included statements such as "not much broad material available in collection," "no recent textbook available," "strongly urge that we acquire additional monographs." Other surveys had lists of books which the reviewer felt should be purchased but few comments as to why they were recommended.

Literature Profiles

At this point the work of the library staff truly began. It was our responsibility to draw up a detailed description of the results and to propose a method for the implementation of an ongoing program. What we did in effect was a profile on the literature of each field. We began by reviewing what has been written concerning the literature of the field, the availability of adequate bibliographies, the activity of books currently in the library on the same subject and the number of requests for books on the subjects we were forced to borrow from outside sources. This information was readily available from the inter-library loan computer program which provides us with the capability of retrospective analysis of inter-library loan requests. In addition, we compiled information on each subject regarding its relevance to the firm as evidenced by the total number of people involved in it and the total research budget amount allocated to it. Naturally there was not a direct correlation between the subjects selected for the collection survey and the research budget. It was not too difficult to make the necessary adjustments, however. We benefited twofold in this by learning more about the nature of the projects being conducted and the long range plans of each department.

All of this still left the library in the position of filling requests without contributing to the selection of titles. The bookshelf of the librarian was still unused. *Sources In Science* was untouched. We had become involved in the decision-making process, but our richest resources remained untapped. What evolved as a result of this void is one of the most worthwhile aspects of the entire program.

Maintaining a Current Collection

With the help of research personnel, we had developed a profile for each subject area, and we had determined at which level each should be maintained. The third step would involve developing the collection to the desired level and the maintenance of this level within budgetary limits. Our major interest became the latter; i.e., to determine the estimated annual cost of keeping up with worthwhile current publications in the various disciplines. This phase of the program would not involve retrospective purchasing nor the purchase of annuals or serials which is handled on a continuing basis. Current book reviews appearing in the major discipline journals were chosen as the raw data source for our update program. From these, we could obtain:

- Approximate number of titles published annually in a given subject.
- Approximate cost of material published in a given subject.
- Up-to-date bibliography of titles in a given subject.

Journals were reviewed to determine the most appropriate ones for each category. Those titles containing annotated reviews on a regular basis were chosen. The same program developed for the collection survey was used for indexing the reviews.

In order to establish the average number of books and the average annual cost of these, we indexed the reviews for 1968 and 1969. Each review was keypunched to print subject, type of book (reference, text, proceedings, monograph), author, title, cost, review address.

Beginning in June of 1970, we indexed the reviews as the journals were received. The entire file could be printed using any of the above items as an entry point.

This file serves multiple purposes. Most importantly, it serves as an ideal source for constructing an allocated book budget, based on user requests and needs.

The Budget

In developing cost data, two sets of figures are necessary: 1) a basic allocation, and 2) an augmentation. The basic allocation reflects the sum necessary to maintain the collection and the augmentation is designated for developing the collection to the levels indicated desirable. The maintenance cost will remain fairly stable from year to year and can be calculated from past acquisition records. Figures for the second category are determined from the review index.

In planning the book budget for 1971, the procedure used was as follows (see Figure 3): First, the approximate total cost of all books published in fields pertinent to our interests was determined from the review index print-out. This figure is broken down into the subject categories to provide us with a picture of the emphasis as it exists in the publication market. The total research budget is then examined to determine the emphasis in each category from the company's point of view. The book figure established the availability and the budget figures determine allocation based on the overall ratio of book budget to book allocation (see Figure 4). Thus, we were able to set a book acquisition figure which was realistically based on the quantity of publication and the emphasis placed on fields of research within the company.

Follow-Up

Once the book budget allocation was determined, conferences were again held with various members of the research staff to discuss the amounts allocated to their fields. They were told they would receive a quarterly activity report, one

Figure 3. Allocation Formula

Let: C_T = Total cost of books published of pertinent research types

(Assume k research types)

C_i = Cost of type "i" books published ($i = 1 \ldots k$) $\left(\sum_{i=1}^{k} C_i = C_T\right)$

R_T = Total research budget (Assume k research types as above for C_T)

R_i = Research budget for type "i" research ($r = 1 \ldots k$) $\left(\sum_{i=1}^{k} R_i = R_T\right)$

$r_i = \frac{R_i}{R_T}$ = Fraction of total budget allocated to type "i" research

$$i = 1 \ldots k \qquad \sum_{i=1}^{k} r_i = 1$$

B_T = Total book budget (same k research types)

Then B_i = Book budget allocated to type "i" books

$$= \frac{C_i\, r_i}{\sum_{i=1}^{k} C_i\, r_i} \times B_T = \frac{C_i\, (R_i/R_T)}{\sum_{i=1}^{k} C_i\, R_i/R_T} \times B_T$$

$$= \frac{C_i\, R_i}{\sum_{i=1}^{k} C_i\, R_i} \times B_T$$

Figure 4. Formula in Action

Class	C_i (\$)	R_i (\$)	r_i	$C_i \times r_i$	$\frac{(C_i\, r_i)}{\sum (C_i\, r_i)}$	$\times B_T = 5{,}000$
A	1,000	20,000	0.20	200	0.049	\$ 245
B	3,000	30,000	0.30	900	0.220	1,100
C	6,000	50,000	0.50	3,000	0.732	3,660
Total	$C_T = 10{,}000$	$R_T = 100{,}000$	1.00	$\Sigma = 4{,}100$	1.000	\$5,000

that will show the amount spent to date and a list of the books purchased. This is available on request from the constantly up-dated computer book-acquisition file.

Each time a purchase is made the information is added to the collection survey file so that complete holdings in all subject areas are always available for print-out should they be needed. It is a valuable reference tool when discussing our holdings with either department heads or new employees since the card catalog is a bit unhandy to transport to conferences and laboratories.

A print-out of the reviews indexed in any field is also available on request at any time. This index is always referred to when a book request is received. If the review appears objectionable or the book seems to duplicate material in our holdings, the requester is sent a copy of the review and asked to reconsider his recommendation.

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Time for Decision

Library Education for the Seventies

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■ A model for a master's degree program in library and information science is suggested. Degree requirements should not be couched in terms of courses to be completed. The degree ought to certify that its holder has presented evidence of basic competencies needed for successful professional practice, and has also developed the basis for a field of specialization. Professional associations have a responsibility to define the competencies necessary to practice at the professional level in the public interest. Certification is needed to direct professional education, and to make continuing education a necessity rather than an option. Involvement of practitioners in professional education is a dimension of continuing education.

LIBRARY SCHOOLS, if they are not already doing so, must soon make some decisions about their programs; specifically, the master's degree programs. These decisions are of central importance because that degree should articulate with paraprofessional and undergraduate programs as well as with post-master's and doctoral programs. These decisions cannot be focused upon defense of the status quo; rather the decisions must be directed toward change. All of the institutions and organizations, and all of the people who vitalize the institutions and organizations which impinge upon library schools are themselves in the process of making decisions in response to demands for change—libraries, librarians, professional associations, universities, students, teachers, academic administrators and planners.

One way to start the decision making process is to establish a model or hypothetical program. When it is agreed to accept the model, or some modification of it, it becomes a plan. When the plan is fully implemented it becomes a program. At UCLA about two or three years ago we began to construct a model for a master's degree program. We do not claim that it is ours because it has been shaped and changed by the professional literature; by policies and plans of professional associations; by studies of higher education and the reports of these studies, many of which contain radical recommendations; and by programs of graduate library schools in the United States (especially that of the University of Chicago) and abroad (especially those of Great Britain and Canada). Although there are many aspects of the model which seem only to describe current practice at one place or another, it is unlikely that there is any existing program which contains every element and subelement of the model. If such a program actually did exist, we would no longer be talking about a model, but rather the program itself.

The Program Model

This model for a master's degree program in library and information science consists of seven elements:

1. The statement of the mission and objectives of the school offering the program.
2. The policies, procedures and organization required to operate the program and improve it.
3. Admission requirements.
4. Degree requirements.
5. Means of obtaining competence and evidence of competence.
6. Areas of competence which the degree certifies.
7. Articulation of the degree with formal and informal continuing education programs.

It could be argued that the first two elements are related and supportive rather than actual parts of a degree program, and that they are therefore inappropriate as elements of the model. Yet, a program which is not identified with the mission and objectives of the school which offers it can quickly become irrelevant and arcane. The same will happen to a program which is regarded as separate from the organization, policies and procedures needed to make it operate and improve.

It could also be argued that continuing education is something which follows a master's degree program and is therefore inappropriate as an element of the model. However, it is felt that the master's degree is simply a stage of formal education and really the first part of professional education which must be a continuing process. Further, the master's degree program should provide the focus for two kinds of continuing education programs of library schools: 1) those leading to additional certificates and degrees, and 2) those which simply stimulate mutually beneficial interaction between schools and practitioners.

1) A Statement of the Mission of the School

Most universities have passed from line budgeting through performance budgeting and have arrived at relating planning to budgeting with continuous review and evaluation. At first it seemed difficult to apply PPB to academic situations because the concept was devised for single mission-oriented programs, and once the mission was accomplished the program was finished. Universities are multi-program institutions and most of their programs are open-ended; that is, their missions are really never accomplished. In a library school, instead of setting out to prepare a given number of persons to enter professional practice, our mission has been continuously to prepare such persons for a profession which has changing requirements. It turns out, after all, that neither universities nor library schools can escape defining their missions simply because they are open-ended. The model calls for definition of the library school's mission under several headings:

▶ To study manpower needs, locally and nationally, in order to determine the kinds of competence needed by professional practitioners, research-teaching personnel, and specialists in libraries, information centers, the information and communication industries, bibliographical enterprises, and training or educational institutions. The school must determine the type, quality, and level or intensity of training required to equip its graduates for effective contributions at the present time, but more importantly, also for predictable changes in our society.

▶ To recruit, select, and train (i.e., offer the necessary programs of instruction leading to appropriate degrees and certificates) persons to fill the general and specialized manpower needs of the agencies mentioned above. Graduates must have skills in management, research and teaching; and also general professional competence as well as some specialized professional or subject-oriented competence.

- Through research, to contribute to the solution of problems encountered in librarianship, bibliography and information science; through state-of-the-art studies, to provide fresh interpretations or determine areas currently in need of study; and through far-ranging inquiry, to discover new knowledge or new insights and report them in the professional and scholarly literature.
- To provide the opportunity and facilities for continuing education of practicing librarians, bibliographers, and information scientists.
- Through direct participation on the part of its faculty, staff and students, to advise and assist in established, innovative, and experimental programs—local, regional, national, international—which directly or indirectly are related to the information needs of people at all age levels in various social and institutional environments.
- To review and evaluate this mission and measure and analyze the performance of programs established to accomplish it.

A school must also list all of its programs, preferably as a part of the statement of the school's mission, to ensure that each program is directly related to the mission and to show relationships among programs. At UCLA, for example, we have identified five programs of instruction and research which depend almost entirely upon university funding through the school's budget. We have identified five additional programs which depend upon university funding only for stimulation, administration and use of facilities. Extramural grants and paid fees or sales determine the limits of some of these programs; others depend heavily upon volunteered time of the school's staff and of interested practitioners.

2) Written and Codified Policies and Procedures Which Clarify the Organization, Operations, Responsibilities, and Accountability of the School—Open to Public Scrutiny, for Evaluation and Criticism.

The model cannot specify policies and procedures because they must vary with the mission of the school and the legislation of the parent institution. My own school, for example, has prepared over 50 formal statements of policy and procedures; several of them have undergone many revisions.

It is in the policies and procedures that one should be able to discover how a school accomplishes or assures certain requirements important to a master's degree program, even though not specified in it. Here are some examples. How does the school attempt to recruit students with a variety of ethnic, cultural, and economic backgrounds? How does the school guarantee the participation of students and staff members in basic decisions such as staffing, academic programs, courses, etc.? What are the guidelines for evaluating student performance? How does the school provide for evaluation of teaching effectiveness and course quality by students as well as by faculty members and the support and administrative staff? How are the civil rights and academic freedom of staff members and students protected? What machinery is provided for due process and appeal? What evidence is there that the school is making maximum use of up-to-date teaching techniques, of multimedia instructional materials, and of equipment and facilities to promote a stimulating and effective learning environment? How does the school guarantee compliance with its own regulations and those of the university?

Modern society demands responsible administration and management, complete disclosure of activities, protection of individual privacy and civil liberties, and full accountability. A model for professional education cannot disregard these demands.

3) Admission Requirements. Conditions of Admission of Students Must Be Clearly Stated and Must Be Published. If a School Offers More Than One Program of Instruction Leading to a Degree or Certificate, the Admission Requirements to Each Program Must Be Stated Separately. Relationships Among Programs Must Be Explained in the Statements of Admission Requirements or in the Statement of the School's Mission and Programs.

Admission requirements are not new. Library schools have always had them, but the model makes clear certain aspects which are frequently obscured.

- A person applies for *admission to a program,* offered by the school, not merely to student membership in the school. Each program must have objectives, and the program must lead either to a degree or certificate or not. Admission requirements must not be artificial or arbitrary; they must either be directly and demonstrably related to the program, or to the limitation in number of students for which the school has resources and facilities.
- Admission requirements must be enumerated and explained clearly, quantitatively when appropriate. This is essential for the potential applicant to prepare himself to qualify for admission, or to enable him to make a self-evaluation which will determine whether or not he should apply.
- Admission requirements should not be changed capriciously, and they should not be changed without public notice. The effective date of changes must be reasonably set, usually a year following announcement, so that potential applicants are allowed a realistic amount of time to make adjustments in their preparation for admission.
- It must be made clear that admission requirements collectively reflect a standard for admission and that there is a possibility of waivers, adjustments, modifications, weighting, and consideration of qualifications not specifically enumerated.

Formulation of admission requirements is more difficult than it may appear. Universities have broad, minimum admission requirements which all departments, schools and colleges within them must honor. In addition, the university expects each school to determine specific additional admission requirements which must be academically justified, realistically related to programs, and which take into consideration the just claims or demands of minority groups or disadvantaged persons for access to professional training. Practicing librarians occasionally give advice to schools on admission requirements. Sometimes these cannot be legally applied; sometimes they conflict with general standards established by a university.

Most schools have not attained model status in the matter of admission requirements. Some schools announce admission requirements, but are very lax in applying them in order to fill quotas or sub-quotas of students. At the other extreme, schools are sometimes said to be so rigid in the formulation of requirements and in applying them that they deny access to persons of great professional promise. Occasionally there may be injustice, or cowardice, in the enforcement of requirements—as when an applicant is told his GRE score is too low, or that the quota is filled, when in reality the admissions officer may have misgivings about the emotional stability of the applicant, or may employ personal prejudices.

4) The Statement of Degree Requirements Which Includes the Requirements of the University and Also Those of the School Itself, the Latter to Recognize the Competencies Required in Professional Practice.

So far as I am aware, the master's degree requirements of universities are reasonable, albeit somewhat formal, and present no real difficulties. They usually include: 1) Minimum and maximum length of residence in the university; 2) Minimum number of courses, and specified level of courses; 3) Scholarship standing, i.e., minimum grade point average. Fortunately, there is a growing liberalization, even at the graduate level, in the assignment of pass-fail grades rather than A,B,C letter grades or numerical grades; 4) Formal filing of a thesis or research paper, or of a comprehensive examination, or both; 5) A petition for advancement to candidacy for the degree or certificate.

Universities leave to schools and departments the determination of additional degree requirements, applicable to the specific needs of the discipline or profession for which the degrees provide initial preparation. It is here that the model departs from common practice. In the model, the additional requirements for the master's degree in library and information science are:

▶ Evidence of competence in specified areas, i.e., the model specifies seven competencies which are necessary for all practitioners in librarianship, bibliography, and information science. The important departure from previous practice is that *competencies,* not courses, are required for the degree. Roy Stokes *(1)*, a penetrating observer, gave us a brilliant metaphor when he goaded us about the trading stamp mentality which has pervaded American higher education. We, I hope, no longer expect a graduate student merely to accumulate semester or quarter units and grade points as though they were stamps, with the objective of filling his book so that he may go to the redemption center—the registrar's office—and turn it in for a degree.

Beyond minimum competence in all seven specified areas, a higher level of competence in certain areas is also required, the areas of higher competence depending upon the student's field of specialization. The seven areas of competence are listed in the sixth element of the model.

▶ The second degree requirement is evidence of specialization in a field within, or closely related to, librarianship, bibliography, or information science. The specialization may be developed almost entirely within the program and courses offered by the library school, but the specialization might be based upon study in cognate academic disciplines or professions. When the specialization is based upon cognate disciplines, its relevance to librarianship, bibliography or information science must be evident in the thesis or brought out by comprehensive examination if a research paper is submitted in lieu of a formal thesis.

Normally, evidence of satisfactory preparation for specialization will be an academic year of post-baccalaureate study in addition to the academic year normally needed to acquire the seven basic competencies. However, experience and/or study in some other discipline or some other university or place may provide a part or all of the specialized preparation. The library school may, when it deems it necessary, require formal testing to prove that experience is actually equivalent in knowledge base to academic study.

▶ The third degree requirement is a thesis *or* research paper. If a student has already written a formal thesis or dissertation to fulfill the requirements of an earlier degree he should elect to present his research in format acceptable in the open literature or by a clearinghouse. It is expensive and time consuming to appoint a faculty committee to direct a student's research when a committee is not needed. It is also wasteful to insist upon formal thesis format, spelling out in detail the research methodology, when a student has otherwise proved his research understanding by having already written a thesis or dissertation.

The subject of the thesis or research paper must lie in the student's field of specialization; and if the paper does not directly prove an understanding of the theories, principles and methodology of modern research, there should be a comprehensive examination to prove that understanding and the relationship of the research paper to the broad concerns of librarianship, bibliography, and information science. The research paper or thesis must be of sufficient importance and substance to justify immediate dissemination through publication or deposit in an information clearinghouse which will furnish copies upon request.

▶ The final degree requirement is the completion of a summary record of competence, a curriculum vitae, and a summary record of performance in the school. These records, compiled by the student and by his faculty program advisor, are prepared for deposit in the student's permanent file.

5) An Explanation of What Is Meant by Competence.

Competence is acquired through: 1) an understanding of the theory and/or principles underlying a defined area of knowledge, technology, or practice; 2) a familiarity with the literature of a defined area; and 3) demonstrated ability in using the techniques, tools, and methods for effective performance in a defined activity or operation.

Some of the *means* of obtaining competence and examples of *evidence* of competence are:

▶ Formal, organized course work or a program of study. *Evidence:* transcripts, course grades, scores on examinations, written performance evaluations, papers submitted to fulfill requirements of a course or a program of study.

▶ Independent study. *Evidence:* special written or oral examinations, publications, reports.

▶ Directed individual study. *Evidence:* written or oral examinations and/or evaluation by the person who directed the study. Most library schools have courses designed to provide directed individual study.

▶ Working experience. *Evidence:* written evaluation of the nature of the work and of the performance of the individual doing the work, prepared by the person supervising the work. Self-evaluation is acceptable evidence also, supported by a written or oral examination.

▶ Internship. *Evidence:* written description of the program and evaluation of performance in it.

Two points are worth emphasizing in connection with this element of the model. First, it is recognized that competence may be acquired in a variety of ways, both before and after admission to the master's degree program, and in locations other than the library school and its university. Second, it permits—hopefully, even encourages—transferring part of professional education to libraries or other information agencies, and it will involve practicing librarians in the teaching program. Of the means of imparting competence, internship seems to be one of the most effective and the one in which librarians can be most fully involved in teaching. However, good internships will be difficult to establish because the library providing the facilities for the intern should be paid for its time and effort, and the intern should receive a stipend.

6) The Required Areas of Competence for the Master's Degree.

Here again, the model departs drastically from recent practice, even though schools for several years have been reducing the number of courses specifically required for degrees. Requiring competencies rather than courses also calls upon practitioners to accept new responsibilities in professional education; it even invites them to participate directly in determining degree requirements. This element is related to continuing education which should lead both to and from the school. Practitioners will renew and update their competencies, and in so doing they will renew and update the programs of their professional schools.

The matter of requiring competencies for degrees relates to both accreditation and certification. It is probably necessary in the early stages of a certification program to rely heavily upon two devices: 1) provision of a grandfather clause to certify experienced practitioners who lack paper qualifications, and 2) blanket acceptance of degrees or courses within accredited programs as evidence of qualification for certification. However, if a certification program stops here there will be endless bickering about what courses should and should not be offered in professional schools. At this level, a certification program is quite unrealistic because it implies that one can acquire competence only through degrees, courses, workshops, institutes, etc. It is the old trading stamp mentality again—in the profession rather than in the university. It also, at this level, makes continuing education an option rather than a requirement. Lifelong certification makes no more sense, and is no more in the public interest, than drivers' licenses without expiration dates. One should not be certified or licensed to practice in any profession without periodically proving that he has maintained his competence. Also, certification at this level is something of a "cop-out" because it means that the certifying body and the practitioners for whom it acts have not answered the most important question of all: *Exactly what kinds of competence are necessary* (and required to protect the public), *for successful professional practice in the field of librarianship being certified?*

When the profession and the various segments of it are able to tell the professional schools exactly what competencies are needed, the schools will either be able to respond properly, or be compelled to announce that they cannot respond.

Lacking clear definition of required competencies by the profession, the model must rely upon a combination of existing practice and critical comments about the practice which has appeared in the professional literature. The model lists seven areas of competence which the master's degree in library and information science should certify. It will probably be difficult to reach agreement on the list. At UCLA it has taken us over a year to construct a list, and we are not satisfied with it. However, this element is the most important in the model.

The seven areas of required competence are:

1. Foreign languages, mathematics or statistics, and computer programming. Library schools can hardly be expected to teach these competencies. Students should have acquired the minimum competence before entering the program. Higher levels of competence can, of course, be acquired during the program through courses in other departments of the university or through the other means of acquiring competence explained in the fifth element of the model.
2. The philosophy and major problems of librarianship; the roles of librarians, bibliographers and information scientists in society; the social value and educational relevance of libraries, information, and communication systems.
3. Evaluation, selection, and acquisition of materials for libraries and other agencies which provide texts (manuscript, printed, sound recorded, etc.), documents (books, serials, microforms, maps, prints, and other media of recording), and information services for education, research, recreation, and cultural enrichment.
4. Identification, description, information analysis, and bibliographical control (e.g., listing, locating copies, etc.) of documents which record human knowledge (including, but not limited to, printed or written texts).
5. Information resources and services; dissemination of information.
6. Government, organization, administration and management related to libraries and other information agencies; contemporary theory and practice in the use and development of human resources within organizations.
7. The nature and importance of skills which are essential for performance at the professional level by librarians, bibliographers, and information scientists—specifically: a) Theories, principles and methodology of research. (It is a requirement of performance at the professional level to be able to identify

problems, investigate them, propose solutions, test the proposed solutions, and communicate findings.) b) Theories, principles, and methodologies of teaching, supervision, and performance evaluation. (It is a requirement of performance at the professional level to be able to teach others to use libraries, locate and evaluate information, enter and use information systems, etc. and to recruit, train, supervise and evaluate the performance of assistants.) c) Applicability of systems analysis and design, quantification (measurement, costing, etc.), and mechanization or automation in the solution of problems of management, communication and information retrieval.

7) The Master's Degree Program Relates to and Supports Continuing Education and Research. It Also Provides the Focus for a Partnership Between Library Schools and the Profession.

In January 1971 The Carnegie Commission on Higher Education published a special report, *Less Time, More Options: Education Beyond the High School (2)*. One of the major themes of the report is stated this way: "Opportunities for higher education and the degrees it affords should be available to persons throughout their lifetimes and not just immediately after high school." Another theme: "Society would gain if work and study were mixed throughout a lifetime, thus reducing the sense of sharply compartmentalized roles of isolated students *v.* workers and of youth *v.* isolated age."

A major recommendation of the *Report* is that a degree or other form of credit be made available to students at least every two years in their careers, and in some cases every year. At each of these points there would be three options: 1) terminate formal higher education, 2) continue formal higher education to the next certificate or degree point, or 3) stopout—not dropout—for a period of time to gain work experience. The *Report* suggests that the master's degree should represent two years of study after the bachelor's degree.

The master's degree in library and information science represents the threshold of continuing education. At this point the student may enter professional practice and terminate formal higher education; he might continue without interruption to a certificate of specialization or a doctorate; or he might enter professional practice and later return for further formal higher education.

Library schools have failed to be satisfactorily responsive to the demands for more continuing education programs because they usually lack the funds, personnel and other resources to provide the service. But perhaps both the schools and practitioners have taken too limited a view of what continuing education is, or can be. There are ways other than summer sessions and institutes.

The Carnegie *Report* just mentioned, and others such as *A First Report of the Assembly on University Goals and Governance (3)* sponsored by The American Academy of Arts and Sciences (also published in January 1971), provide strong indications that universities are becoming, or are planning to become, more involved in open or extended programs which will bring universities into working relationships with the communities and professions they serve. There will be a change in the age levels of entrance, exit, and re-entrance into and out of the university. The result will be a student body mix of younger and older persons, of beginners and experienced practitioners, and of persons with a great variety of backgrounds. This association of differences will greatly enhance the learning process.

Actually, much of this is already happening in librarianship. More and more students are acquiring some competence in libraries, where librarians are the professors. There is some, but there should be greater, use of librarians as part-time or temporary faculty members in the schools. It is less common, but it should become more common for full-time library school faculty members to be granted leaves of absence to return to practice in order to update or extend their professional experience. This also suggests the possibility of exchanges—and I know of none in the United States—between libraries and library schools whereby a librarian and a professor might be exchanged for a year. Any faculty member who has tried it, and been conscientious about it, knows that getting back on the firing line of professional practice is bound to increase his competence which is, after all, what continuing education is about. Professors need continuing education also. Any librarian who has tried it, and been conscientious about it, also knows that preparing and teaching a course for presentation to an intelligent and critical group of students is bound to increase his competence and be a very real exposure to continuing education.

At UCLA we have learned that having one or two librarians in a course or discussion section greatly enlivens it, adds a dimension of reality to discussion, and forces us to relate theory to practice. Perhaps all library school courses should be open concurrently as extension courses in which any qualified practicing librarian might enroll upon payment of a reasonable fee. Conversely, perhaps all organized extension and summer session courses—our traditional devices for continuing education—should be open to students who are degree candidates. The mix of student and practitioner should also appear in institutes, workshops, conferences, special lectures, meetings of faculties, meetings of professional associations.

Conclusion

This model has been developed for the purpose of assisting decision making on professional education for the 1970's and even the 1980's. Any school which adopts it, or some modification of it, for its plan and then begins to implement the plan will probably encounter unanticipated problems or unexpected reactions by students, alumni, practitioners, academic senates, and university administrators. However, if professional associations are able to make decisions about competencies needed and to consider real certification programs, the decisions the schools must make will be better ones and the problems of improving professional education will be greatly simplified.

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Dr. Horn *is dean of the School of Library Service, University of California, Los Angeles. Presented at the Fourth General Session on Jun 8, 1971, during SLA's 62nd Annual Conference in San Francisco.*

Picture Searching

1. Techniques

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■ Picture searching is discussed as a special intellectual discipline for which no specific education or established requirements exist at present. Certain techniques are discussed, which the author feels should be familiar to an individual who wishes to establish himself as a professional picture searcher.

PICTURE SEARCHING is an activity familiar to picture librarians and picture users but not clearly defined or well understood by even those employers who rely on picture searchers to find needed pictures, order these, and have them delivered in the required form to the patron.

As picture searching demands professional competence, there should be some agreement on the educational background needed for entering this field. There should also be a body of knowledge familiar to experienced searchers.

Educational Background

Faced with difficult problems of picture searching, the more the searcher can do in preparing for the task at home the more time he can save in going through the actual files he has to search. But how can the picture searcher learn about all the possible pictures available to him?

The first edition of *Picture Sources* published in 1959 was a pioneering effort to find and list collections. The second (1964) edition, *Picture Sources 2,* is greatly enlarged, and thus of much greater help to the searcher. At present SLA's Picture Division, in cooperation with the American Society of Picture Professionals [ASPP], is discussing the publication of a third edition with as inclusive as possible a coverage of collections, both domestic and foreign. Because *Picture Sources* lists geographic locations as well as major features of the collections, this information is not repeated here.

The majority of picture searchers today are employed by book and magazine publishers, filmstrip manufacturers, television producers, advertising agencies, and daily newspapers. As all of these users cover a limitless number of subjects, the more the searcher knows, the better he can serve his employer. A good background in liberal arts is therefore a necessity for the picture searcher. An equally important requirement is a knowledge of political, cultural, and scientific history, because the searcher will invariably have to deal with non-current materials in investigating anything but an up-to-date news feature.

This is the first of a two-part article by Mrs. Shaw. Part 2, The Tools of Picture Searching, will appear in the January issue of *Special Libraries.*

Art history helps the searcher distinguish between authentic period pictures and later recreations. It is preferable to leave a historical incident without illustration than to substitute a much later picture purporting to be of the original event. In the same way it is better to use a life portrait of a famous person rather than an imaginary picture created after his death.

A knowledge of the history of photography is essential, because this determines which events the searcher can hope to document through photographs and which he has to cover by using prints or other art work.

Societal Demands

Our period sets the same high standards for authenticity in illustration as in textual material. We have moved far from the early period of book illustration, when a woodcut of a city or of a figure wearing a crown could symbolize any number of cities or several different kings. Our attitude has become more critical with each refinement in the technical side of visual communication. In the early days of photojournalism a clever caption could save a poor picture; today we no longer tolerate this type of doctoring of the truth.

The speed of modern communications is another factor in our demand for visual honesty. Because we can see an earthquake in Pakistan on the very day of the event on our television screens, we expect earlier events to be presented with corresponding accuracy, vividness, and dramatic impact.

The advent of color photography and color printing has revolutionized the field of picture searching since World War II. The demand for color has added a new difficulty to the searcher's task. It is no longer sufficient to find a suitable illustration in a secondary source; the picture searcher has to dig deeper and discover the whereabouts of the original

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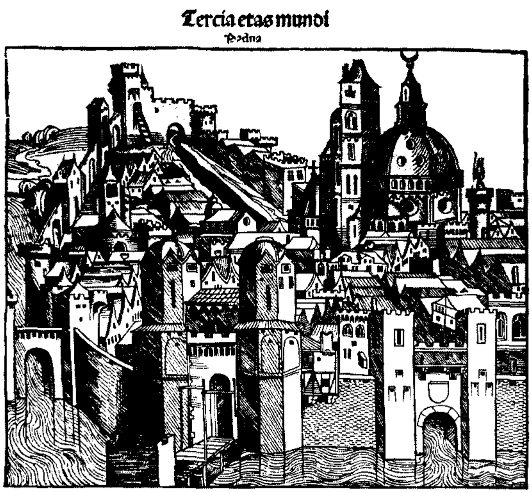
Fanciful view of the city of Padua—partly realistic, partly imaginary. The identical cut of this city view is used in the *Liber chronicarum* for Treveris (Trier), Padua, Massilia (Marseilles), Metis (Metz), Nicea (Nice), and Lituania.



The Library of Congress

Schedel, Hartmann. *Liber chronicarum.* Folio XLIIII verso. "Padua, view of the city." [Incun. 1493 S3] Rare Book Division, Library of Congress, woodcut.

in color to satisfy his editor's wishes. Occasionally the searcher will have to travel to museums to supervise the shooting of color transparencies. This demands an accurate eye for color and some knowledge of the technical difficulties faced by the photographer.

It is often possible to use pictures produced in many different media in one publication. In covering 19th century events a searcher may choose wood engravings from newspapers, original etchings or engravings, lithographed cartoons, black and white daguerreotypes and original photographs made from glass plate negatives. The picture searcher has to know enough about all these different techniques to be able to judge their effectiveness in print. Line drawings and wood engravings generally produce sharply outlined clear photographs, whereas crayon lithographs carelessly reproduced may turn out fuzzy and produce muddy illustrations lacking in black and white contrast. Halftone photographs seldom produce desirable copies. With a great deal of detective work the picture searcher may be able to discover whether or not the original negatives or photographs still exist and where they may be found. It is clear that in every case it is preferable to search out the most authentic version of a picture. If this is impossible, the picture searcher has to exercise enough judgment to decide if a copy of the original is sharp enough for reproduction.

Originality Desirable

Following the lead of an earlier picture searcher is never desirable because this leads to over-use of the same illustrations. The famous *Farm Security Administration* collection of photographs of the depression years numbers close to 75,000 photographs. The same few pictures, however, are published time and time again as illustrations in numerous books. These images have today lost their freshness and initial impact, because the same scenes have been reprinted until they have become stereotypes. Culling picture information from

The Library of Congress

Farm Security Administration photograph which still retains its freshness.

Chesnee, S.C. June 1937, *A Sharecropper Boy*, Farm Security Administration photograph. LC-USF34-17376C.

* *

already published books should spur a good searcher to an effort not to use the same pictures but to rise to the challenge of making fresh discoveries in untapped picture files.

A simple explanation for the re-use of photographs is the saving of money. Photographs from previously processed negatives are often sold more cheaply than pictures which have to be copied for the first time. New and fresh material could suddenly surface, if photograph costs were determined in such a manner that the searcher wishing to use new collections would not be penalized for his creative efforts. Obviously, this runs counter to sound photo lab business practices. Publishers also want to save money by ordering pictures seen in published books with accurate credit lines. Following this lead saves many manhours of searching time as well as travel time either in New York or to and from collections outside the city.

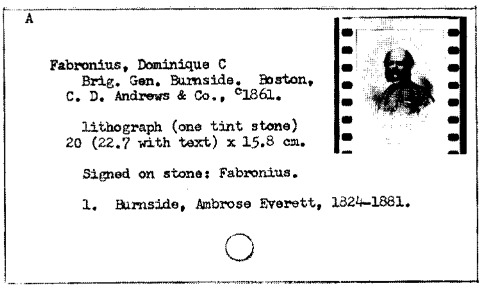
Picture searchers should make every effort to convince publishers to allow them to use the best possible pictures regardless of the higher price. This would bring prestige to the publishing house and fresh material to the reader.

Quite another type of problem was met by a picture searcher who was told by his employer that photographs which were reasonable in price could not possibly be any good. He was talking about the priceless collections of the Library of Congress!

The most elusive qualification required of a professional picture searcher is good taste. In choosing illustrations for a picture biography of a prominent man, whose dates fall into the post-Civil War period, the searcher often has such vast quantities of material at his disposal that his biggest problem turns out to be what he can safely leave out and what should be stressed in the pictorial documentation. If the general presentation is popular, the tone of the pictures should be casual and include cartoons, posters, and ephemeral items. If, on the other hand, the presentation is of a highly scientific nature, great efforts should be made to evaluate critically every illustration and use only pictures which harmonize with the style of writing. Authors of biographical works are not necessarily familiar with either picture searching or the presentation of pictures in books. They should realize that pictures are as much original source material as are manuscripts, current newspapers, and other contemporary artifacts. Therefore, they should develop their own picture sense and refrain from sending strange picture searchers to match pictures to an unfamiliar text. Authors could still accept guidance in distinguishing good and bad illustrative material. Competent picture searchers are simultaneously picture editors. Only the searcher can know what pictures should be selected from the files he sees, since the author and text editor rarely have examined the same files.

* *

Visual Catalog Card from Historical Print Collection, Library of Congress.


A

Fabronius, Dominique C
Brig. Gen. Burnside. Boston, C. D. Andrews & Co., c1861.

lithograph (one tint stone)
20 (22.7 with text) x 15.8 cm.

Signed on stone: Fabronius.

1. Burnside, Ambrose Everett, 1824-1881.

Organization of Picture Collections

There is no consistency in the organization of picture files. Every picture collection has worked out a system which best suits the retrieval needs of its readers. This being the case, picture searchers should familiarize themselves with the most commonly used filing systems.

A fairly recent aid in picture retrieval is visual catalog cards and aperture cards which include an image of the wanted picture on the card itself. The picture searcher of today will not find this degree of specificity in very many collections because of the expense involved in this process.

Microfilms of series of photographs or microfiche collections are another recent development. In the future more collections will turn to miniaturization because of space problems which are becoming harder to solve. Copying original material on film also aids in preserving it because the originals are not handled as often in the searching process.

Information retrieval by computer in the field of picture research is in its infancy. A universal slide classification system with automatic indexing is being developed at the University Library, University of California in Santa Cruz. The U.S. Army Photographic Agency is changing to a semi-automated system, in which each microfilm cartridge can hold 1,000 images. These can be scanned in six seconds to locate a specific image. Many other picture collections in the United States are presently investigating the feasibility of automation.

Collections

Picture searchers seldom understand the difference in the interior organization and the day-to-day operations of commercial agencies versus government collections or historical societies and other private picture sources.

Commercial picture agencies exist in order to serve the public as fast and as well as possible. Their basic aim is to make a profit by offering better and speedier service than their competitors. From a recent article discussing the Keystone-Germany agency in Munich we learn that this commercial agency has eleven boxes of pictures of Adenauer (3,000 pictures to a box) and seventeen cartons of photographs on space flight (again, with 3,000 to a box). With this amount of photographs to be organized, reprinted, and sent out to customers, an agency has to employ an efficient, well-trained and experienced staff, ready to give immediate service to every request.

Compared to this type of commercial operation, government and private collections are not in any position to compete when speed is of importance. Frequently their function is primarily archival with the pictures organized for study purposes. Because they do not profit financially from picture work, the emphasis is not on immediate service or filling lengthy telephone orders of diverse subjects. Duplicate pictures are seldom kept on file, which forces readers to wait several days, or even weeks, while photographs are copied, captioned, packed and finally sent off.

Government picture collections often receive long lists of photograph requests necessitating several days of work from firms who do not know that some of these large agencies are staffed by only two or three reference librarians in spite of their immense collections. The shortage of staff prevents government agencies from service in depth to individuals. The professional picture librarians and subject specialists are delighted to interpret their collections to all comers, but they generally cannot make editorial selections for out of town readers.

Modern copying machines which produce adequate enough visual images for identification purposes have greatly improved communications between picture searcher and picture librarian. When a request is accompanied by an image, searching time is shortened considerably and mistakes can be largely eliminated. An experienced picture searcher will always include an image in his request if he has a specific picture in mind.

(to be continued)

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Mrs. Shaw *is bibliographic specialist in the Prints and Photographs Division of the Library of Congress. Presented at the Picture Division Round Table Discussion on Jun 6, 1971, during SLA's 62nd Annual Conference in San Francisco.*

Machine-Assisted Serials Control

Bindery Preparation and Claims Control

W. A. Wilkinson and Loretta A. Stock

Monsanto Company, Information Center, St. Louis, Mo. 83177

■ Binding specifications are maintained on embossed plastic plates, one plate for each title bound. All binding instructions are imprinted from the plate to a set of forms. The system saves time, reduces errors, is flexible and inexpensive. A computer-assisted system produces claim letters and a claims status report. Issues to be claimed are recorded on a log sheet which is kept at the periodical check-in desk. The log sheet is keypunched and computer-processed monthly to produce ready-to-mail claim letters. Follow-up letters are produced automatically each month until the claims are filled. Total computer costs are $20 per month, or $0.10 per claim letter.

MONSANTO COMPANY uses a serials control system* which assists in ordering, check-in, renewals, etc. The system did not provide means for bindery assistance or claiming missing issues. In this article we shall discuss methods that have been developed to fill those needs.

Bindery Preparation

Anyone who has ever prepared periodicals for binding must have concluded (as we did) that "there must be a better way." Having already reached that conclusion before we began to design our serials system, we considered including a capability for computer-assisted bindery preparation. Ultimately, however, we decided against it, in favor of an alternate system.

In the system adopted, binding specifications are maintained on embossed plastic plates, the type used as credit cards. For each title bound there is a plate containing all of the instructions needed by the bindery to process a volume according to our specification. No other specifications are kept by us (or the bindery). To process a volume for binding the following steps are taken:

1. Collect issues and index and place in order.
2. Pull plastic plate from file and imprint on bindery instruction forms, making one set of forms for each volume of the title to be bound.
3. Write volume number(s) and year(s) on bindery forms in spaces provided.
4. Remove library copies of forms (for

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* Wilkinson, W. A. / A System for Machine-Assisted Serials Control. *Special Libraries* 58 (no.3): p.149–153 (Mar 1967).

library use) and place the other copies with the volumes to be bound.

This system appears to have most of the advantages of a computer-based system without the disadvantages:

1. All of the repetitive copying of title, specifications, etc. has been eliminated. This saves time and prevents transcription errors.
2. This system is cheaper to operate than a computer-based system.
3. Scheduling is more flexible since the bindery forms can be produced on a moment's notice, in any order desired, in as many copies as needed. With computer-assisted systems, bindery preparation must be coordinated with computer runs and (in some cases) with the completion dates of volumes (and indexes).
4. There is no investment in computer programs, file creation or special continuous forms.
5. Knowledge needed by the bindery preparation assistant is minimized, requiring less knowledge than with either the previous conventional method or a computer-assisted system.

In addition to the obvious savings in staff time, several benefits to library users have resulted:

1. The time during which volumes are being prepared for binding or are at the bindery has been reduced, thereby interfering less with library users.
2. As by-products of the bindery instruction forms we obtain two copies for library use as follows:
   a. One copy is placed in a holder on the shelf where the volume belongs, to tell library users that the volume is at the bindery and will be returned by the date indicated.
   b. The other copy is filed alphabetically by title in the library office for staff reference in answering telephone inquiries, etc.

This system was worked out several years ago jointly by us and our bindery. (Since that time the service has been made available to other libraries by several binderies.) We have found that the

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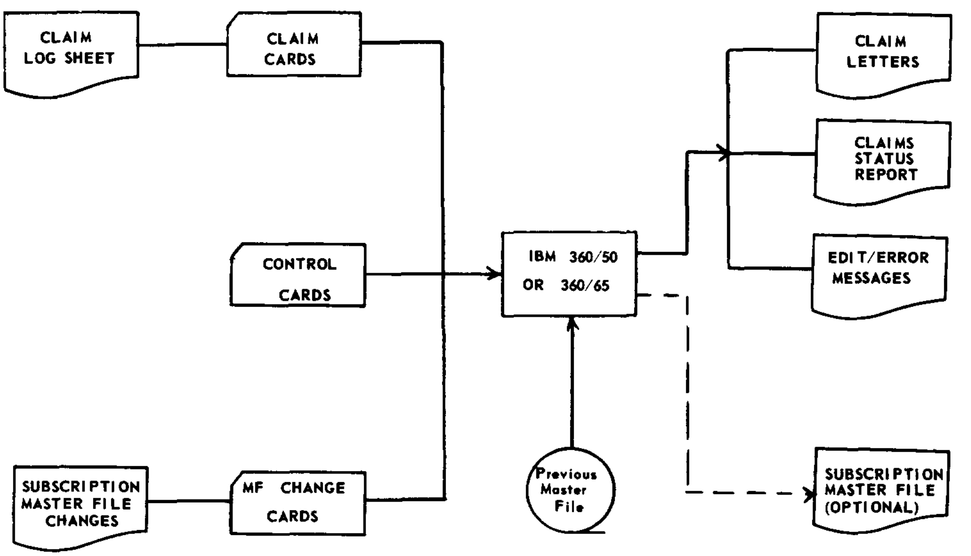
Figure 1. General Flow Chart



time required to prepare volumes for binding has been reduced by at least 50% and errors have been reduced almost to zero. The system is inexpensive, trouble free, and fills our needs remarkably well.

Claims Control

The 1967 article described our computer-produced check-in cards which employ visible signals to help us identify issues not received. While these records enabled us to identify issues which needed to be claimed and where to claim them, the effort required to actually place the claims and follow-up was considerable. For about 2,000 subscriptions approximately 20,000 items should be received, which can require several hundred claims and follow-ups per year. As is the case in most libraries, our periodical check-in desk is overloaded. Since the processing of claims was burdensome, claims were not placed and pursued as diligently as they should have been.

As a result, we investigated possible improvements in the normal claiming process (for instance, special multi-copy, card-size claim forms), and looked into computer assistance. Our main objectives were:

1. To make the recording of claims so simple that it could be done without interrupting the check-in process.
2. To process and forward claims to suppliers quickly, regularly and cheaply.
3. To provide a simple, automatic follow-up on claims.
4. To print a single, up-to-date status report on all outstanding claims.

Our present computer-assisted system satisfies these objectives. To see how these objectives are satisfied requires a brief description of the present system. An overall view is provided in Figure 1.

When periodicals are received they are recorded on a computer-printed check-in form (Figure 2). When the required issues for a month have been received, the visible signal is moved down. If, when checking in an issue it is noticed that a previous issue was not received, it is claimed. Periodically all signals are scanned, to locate those which have not been moved down recently.

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Figure 2. Periodical Check-In Card

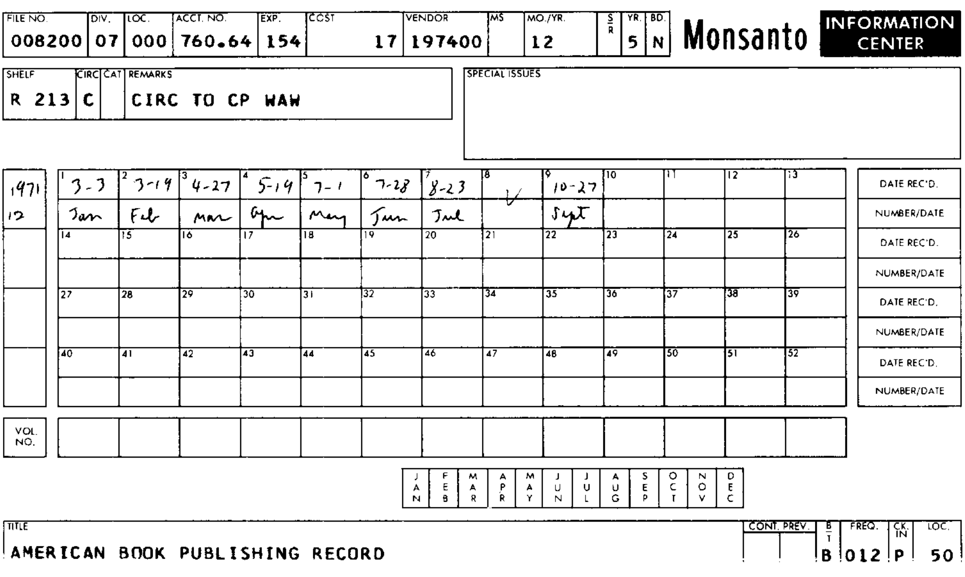

Figure 3. Claims Log Sheet

CLAIMS

PAGE 1 OF ____ DATE 11-8-71

CLAIM NUMBER	LOC	FILE NUMBER	COPY	ACTION	TYPE	INVOICE NUMBER	BLANK	MSG. CODE	BLANK	SPECIAL MESSAGES
710411	50	164250	1	2	6			0		VOL 8 NO 13 SEPT 20 1971
412	50	048400	1	2				0		V 95 # 17 AUG 1971
413	50	174075	1	2				0		V 97 # 19 SEP 1971
414	50	208400	1	2				0		V 75 #344 AUG 1971
415	50	080300	1	2				0		SEPT 1971
416	50	202450	1	1						
416	50	008200	1	2				0		V 12 #8 AUG 1971

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Claims are prepared to obtain those issues.

To make a claim, one line is filled in on the claims Log Sheet (Figure 3). A claim number is assigned (the next available number), the library location is filled in (Location 50 = Central Library), and a copy number indicated. The "action" code in Column 17 indicates whether we are adding, deleting, or changing a claim. Card type 6 appears in Column 18 on all claim cards. The invoice number (Columns 19-26) is optional and is not used unless required by the supplier. A message code can be used (Column 28) to cause a standard message to be printed in the claim letter, such as "all issues for." Otherwise the claim message that will appear in the letter will be exactly as the form is filled in (Columns 30-65).

Throughout the month claims are recorded on the log sheet during the check-in process, and all signals are scanned for signals that have not been moved down because issues were not received. If issues which have been claimed previously are received, they are recorded on the log sheet as deletions (in order that they will be removed from the active claims during the next computer run). At the end of the month all entries on the log sheet (new claims and old claims to be changed or removed) are keypunched to prepare for computer processing.

Claim cards, control cards, and subscription information cards are submitted for processing against a claims master file which was created previously. For each active subscription the master file contains the location (library) number, file number (a title code), copy number, the periodical title, vendor number, name and address and areas for claims to be stored. The subscription information is updated by the subscription information cards (if any) and then claims are added, changed or deleted by the claim cards. Control cards are supplied to tell the computer which reports are to be printed and to provide fixed information which is to be printed on the claim letters (for instance, the library mailing address).

Generally three kinds of reports are printed each month: the claim letters, a claims status report and error messages. Parts of the letter are supplied by the program (heading, wording, etc.), parts from the master file (title, supplier's name and address, etc.) and parts from the control cards (date, library reply address, for instance). Two copies of the claim letters are printed and forwarded to the supplier (one can be used by him to reply to us). We keep only the status report as our record of all active claims.

Note that the status report (Figure 4) not only shows the claim number and when first claimed, but also shows the number of months the claim has been active (see the numbers under the supplier's city). All claims remain in the system for six months (unless deleted), and new claim letters are mailed to the

Figure 4. Claims Status Report

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                         CLAIMS IN LIBRARY SEQUENCE BY FILE NUMBER - 10/22/71                    PAGE  17

LOC FILE NO  COPY VENDOR NO  VENDOR INFORMATION                 MESS CODE -- 1#FOR  2#AFTER  3#BEGINNING
TITLE LINE 1                                            TITLE LINE 2
CLAIM NO  CLAIM DATE  MESS CODE  SPECIAL MESSAGE                    INVOICE NO  MOS ON CLAIM

 50 196225    1     222222    BUTTERWORTH AND COMPANY LTD    88 KINGSWAY              LONDON WC2 ENGLAND
 TRANSACTIONS FARADAY SOCIETY
 710324    10/22/71        1        1971                                             1

 50 200415    1     197400    FRANKLIN SQUARE AGENCY         545 CEDAR LANE           TEANECK NEW JERSEY  07666
 VIROLOGY
 710389    10/22/71        0        VOL 45 NO 3 SEPT 1971                            1

 50 200800    1     197400    FRANKLIN SQUARE AGENCY         545 CEDAR LANE           TEANECK NEW JERSEY  07666
 VYSOKOMOLEKULYARNYE SOYEDINENIYA A
 710067    04/22/71        0        VOL 12  NO 9  1970                               6

 50 208400    1     197400    FRANKLIN SQUARE AGENCY         545 CEDAR LANE           TEANECK NEW JERSEY  07666
 ZEITSCHRIFT PHYSIKALISCHE CHEMIE /FRANKFURT/
 710349    10/22/71        0        V70 NO 5 AND 6 1970                              1
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• •

supplier each month during that period. At the end of six months, claims are removed from the file automatically and listed so other action can be taken if necessary (i.e. purchase the item from another source).

The claims system can accommodate up to ninety-nine libraries and any number of suppliers. Claim letters are printed in batches by libraries and status reports are in order by libraries, then alphabetically by periodical title. Computer processing is done centrally, then claim letters and status reports are forwarded to the appropriate libraries for mailing to suppliers, etc.

The computer programs were written in 360 COBOL and are run on an IBM 360/50 or 65. Computer costs for processing and printing (at commercial rates) are $20 per month, which works out to approximately $0.10 per claim letter, and also includes the cost of the status report.

Response to the system by vendors and publishers has been good. Almost without exception they reply on our claim letter telling us they are shipping the missing issues, telling us why they are not, or asking us for more information. We have received some responses from American publishers within three days. On the other hand, some foreign publishers have not replied in four months. The total number of outstanding claims is gradually declining each month, however.

When libraries automate their records, they find that the most difficult aspect of implementation is to establish accurate records. If our manual records of existing claims had been 100% accurate, it would have been a simple task to "put them on tape." Much of our effort has gone into converting and correcting records, checking shelves, checking with suppliers and publishers, etc.

Nevertheless, we have found this computer-assisted claims system to be inexpensive, convenient, accurate and effective in filling our claims. It is vastly superior to any manual system that we have used and could provide similar benefits to other libraries that use it.

Claims Operating System

The operating system is very straightforward with no complications. Just a few specific details should be considered by the programmer.

Our goal was to start and continue a claim system inexpensively, simply and as soon as possible. The Serial Register System (explained in the 1967 article) held most of the information that was needed to put the claim system on the computer. "Do we combine with it or not?" was the first question. The Serial Register System (SRS) is maintained on punched cards and contains a lot of information not needed in claiming. Likewise, the claim system would have additional information not needed by the SRS. So we didn't combine, but used the SRS to form the first working file and continued separately from there.

Since we process once a month and are constantly updating in a sequential manner we decided to use a tape system rather than disk. This is not to say we won't use disk in the future. (It would just be a matter of a job control language change.) The COBOL language was selected because of the ease of manipulating character information, and the systems back-up knowledge that is available.

One program was needed to pull information from the SRS to start the claim system file. The vendor code, title and file number for each subscription were placed on the new file. It was decided to limit the title to two lines of 60 characters each. Few titles are longer than this, and, if so, enough of the title would appear for identification purposes. Abbreviations could be used in the future.

In the ongoing system there are two programs, each using approximately 32K on the IBM 360/65. The entire system takes less than 2 minutes machine time to process.

In the first step of the program, subscription data cards are sorted into file number, card type and action sequence. Next follows the execution of the first program. This program maintains the subscription data on the claim master file. The subscriptions are maintained in title sequence and have been given codes called file numbers. These file numbers are the same that are used in the SRS. For each subscription the file number, vendor information and the title are stored. This information can be added to, changed or deleted based on action codes used. Vendor addresses have been stored in the program for specific vendor codes. When called for by a subscription it is stored as fixed vendor information with the file number until further action is taken. The library uses one code to indicate that a publisher is the vendor. When this code is used, a specific address must be submitted at some time, otherwise a blank address is stored and used if a claim letter is processed. If a vendor code should take a new meaning, the system allows for one special processing that changes all file numbers using that vendor code to contain the new vendor information. Also, on an optional basis *all* subscriptions on file can be listed showing exactly what is on file for each one. Claims are not included in this file printout. At each processing, error messages are listed as well as the edited data cards. All data cards are listed because the entire file is not printed each time and these monthly listings can be kept as supplements.

Following this update, the claim activity cards are sorted into file number, claim number and action codes, and passed to the last step of the system, which is handled by the second program. Edit errors as well as claims deleted are listed. As was stated earlier, the claims are held on file for six months only, and then deleted with a special message showing on the deletion list. Also, a status report of those subscriptions having claims is prepared showing what is being claimed for that subscription. The claim letter, the main product of the whole system, is prepared by this program at the same time the claim status report is formatted.

Library return mailing addresses are kept in a card file and submitted for processing each month because of the small number and the desired ease of changing from time to time.

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Overseas Report

SDI Systems

A United Kingdom Approach

H. H. Goom

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■ Activity in the United Kingdom in the field of Selective Dissemination of Information is discussed and the approach of one industrial library to the problem is described.

THERE HAS always been a need to help the information consumer keep up to date with new information as it appears. Special libraries have always provided such a facility channelling documents or articles to the right person without a direct request for that particular piece of information. Unfortunately, such services were limited in the amount of material that could be disseminated and the number of people to whom it could be disseminated. These limits were lifted with the arrival of the computer on the information scene, mechanised current awareness was born and the Selective Dissemination of Information (SDI) became the popular term for this updated version of an old technique.

SDI in the United Kingdom

It was intended that this paper should provide a brief description of such a service operated by one industrial library in the United Kingdom, but the description of one service could not be described as indicative of developments in the United Kingdom and a short look at the activities of other organisations seemed advisable as an introduction.

SDI has been a popular subject for discussion for a number of years, but when I looked for examples of practical application the situation resembled that in computerised information retrieval and there was obviously far more "talk" than "do." It is true that we now have services available on a national basis such as the United Kingdom Chemical Information Service using Chemical Abstracts Tapes and "Inspec," the service operated by the Institution of Electrical Engineers, but "in-house" systems are a rarity except in a few large industrial organisations. Thus the important names in the field appeared to be Imperial Chemical Industries Ltd, Unilever Ltd, Shell Research Ltd, the United Kingdom Atomic Energy Authority Culham Laboratory, the Atomic Weapons Research Establishment, and the British Steel Corporation (General Steels Division, Motherwell). Most of these systems have been described in the literature, each has its own significant features, the ICI "Assassin" (Agricultural System for Storage and Subsequent Selection of Information) scheme, for example, can use both "home grown" or commercially produced input, the British Steel Corporation scheme uses the Universal Decimal Classification for the matching process, while the Atomic Weapons Research Establishment search mainly by words in titles and so on, but my general conclusions were that in the main the use of SDI systems was still restricted to large organisations and that the use of commercially or externally produced input on magnetic tape predominated.

Why Mechanise?

Local circumstances determine the requirements of all systems and the service offered in my own organisation was no exception. Guest, Keen and Nettlefolds Ltd is the largest engineering Group in the United Kingdom, more than one-third of its sales are of components—largely high precision—for the world's automotive industry; the other main markets are the engineering and allied industries and the building and construction industries. Manufacturing facilities are widely distributed over the United Kingdom, Europe, Africa, India, Australia and New Zealand. The library and information service is a Group-wide service and our main problems are those of serving scattered users with a wide range of interests. Over the years a number of methods have been used to disseminate information to the members of the Group, but until recently the main method was by a conventional abstract bulletin produced fortnightly and circulated to about 500 individuals and departments within the Group. A separate publication, a *News Review*, issued twice a week, has provided a fast alerting service for commercial and economic information and in addition the information staff has carried out special searches for, and notifications of, information whenever this has been required.

The increasing quantity of information required by an ever-increasing number of personnel indicated that an alternative method of dissemination was necessary which would notify users of new developments in their own particular field with a minimum of delay. A mechanised SDI system seemed to be the answer to this problem, and with the prospect of computer availability it was decided to carry out a detailed study of the need for such a system and to investigate possible methods of putting it into

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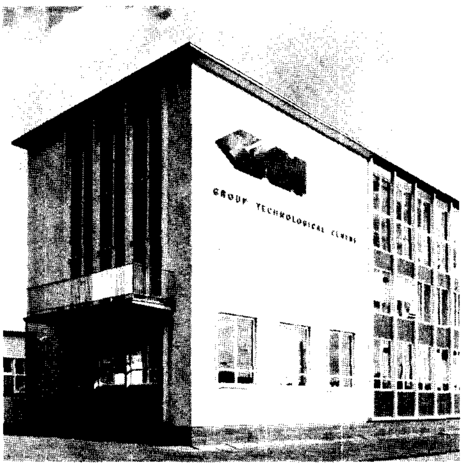
practice. The feasibility study confirmed the demand, but our investigations also confirmed that if costs were to be limited we would need to retain some of the existing routines used in the production of our abstract bulletin and devise a scheme that was basically simple and economical in the use of computer time, yet sufficiently flexible to allow modifications at a later date. It was also decided that even with an SDI service there was still a need for a browsing facility in the form of a conventional abstract bulletin and it would save additional cost if this could be produced as a by-product of the SDI service.

The System

Design work commenced in 1968 and the scheme began operation on a pilot scale in 1969, reaching full operation by 1970. Our input is provided from the in-house abstracting of periodicals, reports and patents which was previously performed for the production of the abstract bulletin and covers engineering and metallurgical matters relevant to the Group, plus some additional material on business management. Some 500 journals are received and scanned but the bulk of the input comes from a smaller hard core of journals. The volume fluctuates but the average input is around 150 abstracts per week.



A controlled language system was decided upon as more economical on computer time; this necessitated the production of a suitable thesaurus. Examination of several hundred abstracts previously issued in the abstract bulletin resulted in the basic compilation, but many additional keywords were included after consulting the Engineers' Joint Council Thesaurus of Scientific and Technical Terms and the American Society for Metals Thesaurus of Metallurgical Terms. The thesaurus has a strong hierarchial structure and now consists of about 3,000 terms.

With users scattered world-wide, profile compilation is from written statements of subject interests. Direct discussion with a user is preferable, but in practice the written statement has usually served as a very good basis for interpreting the actual information needs of the user. These natural language statements are dissected into individual concepts and translated into the appropriate keywords using the thesaurus, adding new terms as necessary. Logical statements using these keywords are compiled for each natural language phrase. The limitations of the computer configuration and the need to minimise the use of computer time led us to consider a system of term weighting for the matching process. A modification of the synthetic Boolean logic system developed from that described by Brandhorst (*1*) was eventually adopted. Thus weightings were added to the keywords of each profile to produce the required relationships.

Abstracts for input to the system are prepared on specially designed forms allowing for author, title, reference, a 500 character abstract and provision for up to twenty keywords. Batches are input on a weekly basis and run against the profiles held in the computer. Where matches occur, a print-out is made of all items that match a user's profile, under that user's name and address. This print-out is taken from the line printer to folding and inserting machines where each sheet is folded so that when it is inserted in a window envelope the user's name and address appear in the window. Reply cards are added to the envelopes so that users can request copies of items notified or comment on the efficiency of the service. This print-out is then mailed directly to customers. For internal use we receive a weekly reference print-out in subject order, but a monthly cumulation arranged under broad subject headings is also produced by the computer and this is used to produce a monthly abstract bulletin. Abstracts are coded before input so that re-arrangement under subject headings can take place.

The feedback we receive is indicative of the success of the system. About 80% of all items put into the system are either requested or are reported by users as being of interest. We think that this high figure indicates that we are too selective with the material we put in and that our coverage could be extended. Problems arise in meeting the demands on the back-up service which are normally met by the provision of photocopies, and it has been necessary to make new administrative arrangements for this purpose.

Storage of the input and its use for information retrieval seemed the next logical step, but it is one we have so far refrained from taking. We examined the pattern of our reference and enquiry demand and found that much of it could be satisfied more quickly and easily by conventional methods. Much of it was in subject fields completely new to our organisation and would not have been covered by our usual input. The limited use that we anticipated would not justify the additional expense of storage and it was decided to restrict the service to SDI. If the pattern of demand should change, then we would have a matching system which should work as well for retrieval purposes as it does for SDI.

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Mr. Goom *is chief information officer, GKN Group Technological Centre, Wolverhampton, England. Presented at a luncheon of the International Relations Committee on Jun 9, 1971, during SLA's 62nd Annual Conference in San Francisco.*

Actions of the Board of Directors Oct 7–9, 1971

The Board of Directors held its Fall Meeting Oct 7–9, 1971 at the Gramercy Park Hotel in New York City. Board members assembled Wednesday evening, Oct 6, to hold a free-form discussion session concerning major goals and priorities of the Association. It is expected that such a meeting will again be held before the Midwinter Meeting.

The Board visited the Association's New York Offices to familiarize themselves with headquarters operations and to meet members of the staff. Ann Firelli, manager of the Membership Department, Mrs. Janet Bailey, editor of *Special Libraries,* Frederick Baum, supervisor of the Order Department, and Ronald Mather, accountant, reported to the Board on the current status of their departments.

General Fund Budget—The Board approved the General Fund Budget for FY1972 (page 540).

Chapter and Division Allotments—The Board approved allotments to be paid at the same rate as last year. However, as a result of suggestions of some Chapter and Division officers after the defeat of the proposal to raise Student Member dues from $5 to $10 at the San Francisco Conference, the CLO and DLO surveyed all Chapter presidents and Division chairmen as to their willingness to waive allotments for Student Members. Of 35 responding Chapters, 32 agreed; of 15 responding Divisions, 14 agreed to waive allotments for Student Members. Therefore, Chapter allotments of $3.00 per member per year and Division Allotments of $2.00 per member per year will be paid by the Association in 1972 for all member categories except Student Members. Allotment payments for 1972, based on the Dec 31, 1971 membership count, will be mailed about mid-February. The year-end count is always the highest membership count for the entire year.

1972 Boston Conference—Registration fees for the Conference were set at:

Members	
Pre-Registration	$30.00
At Conference	40.00
Daily Fee	20.00
Non-Members	
At Conference	45.00
Daily Fee	25.00

The Conference will be at the Statler Hilton Hotel, Boston, Mass., Jun 4–8, 1972.

Research Committee—Dr. Martha Jane K. Zachert, chairman of the Research Committee, presented a proposal for a cooperative project with ERIC/CLIS to produce state-of-the-art reviews of various areas of research activity in library and information science. The Board approved the proposal and budget to produce up to three such reviews in FY1972. In exchange for the right to maintain the reviews in microform within the ERIC system, ERIC/CLIS will contribute toward the cost of the review, primarily in monitoring, control, bibliographic support, and partial payment of an honorarium to the author. SLA will maintain all rights to use and publish the reviews in hard copy format.

DLO—Bess Walford, Division Liaison Officer, recommended that the Board approve the concept of the Chemistry Division appointing a liaison representative with the Division of Chemical Literature, American Chemical Society. The Board also approved Miss Walford's recommendation that encouragement be given to the Sci-Tech Division to pursue further the proposed liaison with the American Mathematical Society.

Chapter and Division Finances—The CLO requested that the Board provide a policy regarding Chapter reimbursement of travel

General Fund Budget (Summary) Jan 1–Dec 31, 1972

Dues & Fees	$233,800
Less Allotments paid to Chapters and Divisions	(39,900)
Net Dues & Fees	$193,900

Income		
Net Dues & Fees		$193,900
Periodical Programs		
Special Libraries Program (Net)	(800)	
Scientific Meetings Program (Net)	3,300	
Technical Book Review Index	6,300	
Program (Net)		8,800
Conference Program (Net)		44,500
Continuing Education Seminars (Net)		500
Non-Serial Publications Fund*		12,000
Equipment Reserve Fund*		500
Interest Income		8,000
Miscellaneous		1,000
Income for General Fund		$269,200
Expenses of General Fund		(265,300)
Anticipated Excess Income Over Expenses		$ 3,900

Expenses	
Salaries & Wages	$146,100
Employee Benefits & Payroll Taxes	18,800
Office Services	50,500
Occupancy Costs	35,000
Professional Fees & Services	19,200
Travel	11,500
Member Services	3,800
Public Relations	9,400
Research Committee	1,400
Oral History Interviews	500
Bank Charges	200
Miscellaneous	100
Contingency for Tax on Advertising Income for FY 1969/70, 1971, 1972	6,000
	$302,500
Less Reduction of Costs for Overhead of Funds and Programs	(37,200)
Expenses of General Fund	$265,300

* An upper limit is defined for the NSP fund ($25,000) and for the Equipment Reserve Fund ($10,000). When these limits are exceeded, the excess is transferred to the General Fund.

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expenses for Chapter officers, primarily to Conferences. The Board, therefore, approved a motion amending the current Association Travel and Expense Policy to include the statement that any travel funds for members of Association units must have prior approval of the unit's appropriate governing body.

In the past there has been some question regarding the finances of Groups within Chapters and Sections within Divisions. The Board stipulated that the monies of all subunits of the Association be reported in the financial statements of the parent units.

The CLO is to bring a recommendation to the Midwinter Meeting concerning the question of limits on total unit and subunit assets.

Placement Policy Committee—At the June Board meeting in San Francisco, the minimum salary offered in "Positions Open" ads in *Special Libraries* was increased to $9,000 per year. The Committee was asked to study the fact that salary ranges in Canada are generally lower than those in the U.S. As a result, the Committee recommended that the $9,000 minimum apply only to U.S. salaries and that the minimum salary for Canadian positions be $8,500. The Board approved the recommendation. *Special Libraries* will continue to accept ads for positions outside the U.S. and Canada at the salaries stated by the advertiser.

H. W. Wilson Company Award—Because of minimal participation in the H. W. Wilson Co. Chapter Award competition, the Board had dissolved that Committee, at its own request, in June. At that time, no provision was made for the award that is donated by The H. W. Wilson Company. The Board approved a recommendation that an annual award be established to be presented to the author of the best paper published in *Special Libraries* each year. President Gonzalez will appoint a Special Committee to formulate guidelines for such an award. The Committee is to report at the Midwinter 1972 meeting.

Student Groups—Dr. Lucille Whalen, Student Relations Officer, presented a progress report on the establishment of Student Groups. Of 38 library schools responding to her communication, only one school declined to participate. Simmons has already organized a Student Group. The Board passed a motion acknowledging and congratulating the Simmons-SLA Student Group for being the first Student Group to be organized. The Board has allotted $25.00 to be paid to each new Student Group.

SLA/ASIS Relations—President Gonzalez announced that he had appointed Ellis Mount to be SLA's Special Representative to ASIS for 1971/72. As with all SLA Special Representatives, it will be Mr. Mount's task to explore means of cooperation between the two associations. William S. Budington was announced as the ASIS liaison representative to SLA.

Since the San Francisco Conference in June, President Gonzalez has had discussions with Robert Kyle, president of ASIS, to determine areas of mutual interest and cooperation.

A Special Committee of the Board met to prepare a list of suggested areas of cooperation for Mr. Mount to explore. It was emphasized that these were non-binding and non-limiting suggestions. The recommendations approved by the Board and passed on to Mr. Mount were as follows: seek out and document those relationships which already exist on a local level; review ASIS activities in view of SLA interests and vice versa; investigate possibilities of joint conferences and/or joint programs at the two present conferences; explore the possibility of joint sponsorship of continuing education seminars; investigate the possibility of publications and/or a newsletter to coordinate joint activities which exist.

Membership Committee—Alberta Berton, chairman of the Membership Committee, reported on the Membership Drive now under way. Chapters will be receiving further details from the committee.

Committee on Committees—The Board approved a number of Committee recommendations.

The definitions of Chapter Liaison Officer and Division Liaison Officer were corrected to make them consistent with each other.

As a result of a request from the Conference Advisory Committee in June, the Committee was redefined to change its composition to include the penultimate (past past) Conference Chairman rather than a member of the past Conference Chairman's Chapter.

The Placement Policy Committee was renamed the Employment Policy Committee to more accurately reflect its activities. The Committee's redefinition includes the charge to work with the Employment Committees of Association units and to recommend policies and practices for the Employment Clearinghouse at Conferences.

By Board action in June, the Public Relations Committee had been discontinued and the position of Public Relations Officer established. A definition for the P.R.O. was approved.

Ferguson Communications Awards Committee

President Gonzalez has appointed Mrs. Lucille Gordon, Institute of Life Insurance, New York, chairman of the Ferguson Communications Awards Committee.

The Board had approved the Insurance Division's proposal to establish such an award for a probationary period of two years. The first award is to be presented during the 1972 Annual Conference. The deadline date for submitting material to Headquarters is Feb 15, 1972. The guidelines for the award appear in the September 1971 issue of *Special Libraries*, p.375–377.

CHAPTERS & DIVISIONS

Cleveland—The Chapter held a seminar Oct 30 on audio-visual and microform technology. The problems, achievements and future of the latest equipment and processes were featured.

Geography and Map Group, Military Group, Science and Technology Group, Washington, D.C.—A joint meeting was held Nov 9. Farouk El-Baz, *Supervisor of Lunar Science* Planning, Lunar Exploration Dept. of Bellcomm, who is on loan to NASA, described the exploration of the moon, specifically the Apollo 15 mission.

Heart of America—The Chapter met Nov 18 at Shawnee-Mission School District Offices to observe Ellen Miller operating an on-line cataloging system utilizing an IBM 360 computer.

Michigan—The Chapter met Nov 17 to hear James L. Limbacher, audio-visual librarian of the Dearborn Public Library System, discuss the "History of Audio-Visual Materials."

Military Librarians—The Division cosponsored, with the U.S. Air Force, the 15th Military Librarian's Workshop Oct 4–6 in San Antonio. John Cook was chairman for the meeting which was a "Management Seminar" for Department of Defense librarians.

Minnesota—Dr. John S. Hoyt, Jr., professor and program leader for special projects, Development & Coordination, University of Minnesota, discussed "Using the 1970 Census Tapes for Housing and Population Through MAPS (Minnesota Analysis and Planning System)," at the Nov 17 Chapter meeting.

New Jersey—"SDI—Experiences and Opportunities" was the topic of the Chapter's Nov 16 meeting. A panel discussed various aspects of SDI in the afternoon. After dinner, Peter Urback, Deputy Director, National Technical Information Center, spoke on "Selective Dissemination of Information from Government Document Centers."

Pacific Northwest—At the Chapter's Nov 6 luncheon meeting, Grieg Aspnes spoke on "The Great Future of the Special Librarian."

Philadelphia—A dinner meeting Nov 10 featured "Community Services—The involvement of industry, university and library in community problems." Speakers were Robert Luce (Model Cities Community Information Center, Philadelphia), Silvia Watson (Office of Community and Cultural Affairs, Paley Library, Temple University), and Jerome Weinstein (director, Camden Housing Improvement Project).

Princeton-Trenton—The Chapter cosponsored a regional conference on the document and bibliographic services available from several research agencies. The meeting, jointly sponsored with the DDC Regional Users, was held Nov 3. Alan Cook, assistant librarian on the Forrestal Campus of Princeton University, discussed the services of DDC, NTIS, NASA and AIAA. A panel discussion followed.

Rio Grande—Plans for the Chapter year include the Chapter's annual meeting in conjunction with the New Mexico Library Association Annual Conference Apr 27–28 in Albuquerque. The 4th Joint Colloquium of the Colorado and Rio Grande Chapters will be held in May.

Southern California—In cooperation with the Sci/Tech Division the Chapter held a "Mini Map Seminar" Nov 30 at Millikan Library, California Institute of Technology, Pasadena. After dinner, guest speaker Ronald Toms (Jet Propulsion Laboratories Advanced Missions Office) reported on the Mariner Mars '71.

First SLA Student Group

SLA is pleased to welcome the Simmons–SLA Student Group as the first Student Group to have been formed under proposals adopted by the Special Libraries Association Board of Directors at the San Francisco Conference in June 1971. With Professor James M. Matarazzo as Faculty Advisor, the new Simmons–SLA Student Group has attracted twenty-six members who are graduate students at Simmons College School of Library Science and Student Members of the Boston Chapter.

This pioneering effort was made possible by the generosity of the Boston Chapter membership under the leadership of Richard S. Huleatt, Chapter president, and because of the interest in special libraries of the student members. The new Student Group is supported, in part, by a grant from the Boston Chapter given in honor of Paul W. Riley, recently deceased member and past president of the Chapter.

MEMBERS IN THE NEWS

Kay Barkley presented a paper on "The Development of a Medical History Display—History of Cardiovascular Sound as a Means of Diagnosis" at the meeting of the Ohio Academy of Medical History, held at the University of Louisville as part of the dedication of the new Health Center.

Mary T. Brady . . . appointed head, telephone reference service, New York Public Library's Mid-Manhattan Library.

Jane Braucher, librarian, Department of Transportation . . . attended Paris Air Show and visited the Documentation Center, European Council of Transportation Ministers, May 1971 . . . also taught legal research, summer session, Graduate School Department of Agriculture.

Kirk Cabeen, Engineering Societies Library . . . is president 1971/72, New York Library Club.

Roza Ekimov, geology librarian, Exploration Library, Humble Oil & Refining Company, Los Angeles, was featured in the Humble *Hesperian,* Aug 1971.

Earl C. Graham, librarian and editor-in-chief, National Easter Seal Society . . . named director of education and information services for the Society.

Catherine Heinz, previously at the Television Information Office, New York . . . named director of the new Broadcast Pioneers Library, Washington, D.C. The library is devoted to information on the history of broadcasting and is operated with an automatic reference and referral system. It is anticipated that the library will eventually have a union catalog of major U.S. collections of broadcasting archives. Miss Heinz recently became the first woman member of the National Broadcasters Club in Washington.

HEINZ

Mrs. Gladys E. Hine . . . received "Woman of the Year Award" of the Alton Business and Professional Women's Club at the club's annual recognition luncheon.

Grace Horton, special projects librarian, Martin P. Catherwood Library, N.Y. State School of Industrial and Labor Relations . . . retired Jul 1971 after 24 years with the library.

Martin Konecnik, formerly head of systems operations, Pennsylvania State University Libraries . . . appointed chief, Library Data Processing Division, Case Western Reserve University Libraries.

Charles O. Olsen . . . represented the International Monetary fund and the World Bank at the third session of the International Advisory Committee on Documentation, Libraries and Archives, UNESCO, Paris, Oct 13–16, 1971.

Mary Quint, Director of Library Careers in Syracuse, N.Y. . . . received the 1971 Halsey W. Wilson Recruitment Award at ALA's annual conference in Dallas.

Mrs. Eleanor Radwan . . . appointed head, general reference service, Mid-Manhattan Library, New York Public Library.

Helen Redman . . . appointed to the American National Standards Institute (ANSI) Z-39 Subcommittee on Report Numbers (report series codes) whose goal is to develop a standard for technical report numbers.

Charles R. Schultz resigned as librarian, G. W. Blunt White Library of the Marine Historical Association, Inc., Mystic, Conn. . . . to accept position of University Archivist at Texas A&M University, College Station, Texas.

Mrs. Marguerite C. Soroka, Engineering Societies Library . . . is secretary-treasurer, Resources and Technical Services Section, New York Library Association.

James M. Turner, Jr. . . . appointed executive secretary, Central New York Reference & Resources Council.

Mrs. Ruth M. Wender . . . served on panel on "The Hospital Library in Perspective" at 21st Annual Meeting of Southern Regional Group, Medical Library Association, Sep 30–Oct 2 in Nashville, Tenn.

SLA Authors

Daniells, Lorna M., comp. *Business Reference Sources,* Boston, Mass., Baker Library, Graduate School of Business Administration, Harvard Univ., 1971. 108p. pap. $3.00.

Freeman, Elsa S., ed. *Progress in Scientific and Technical Communications.* 1970 Annual Report, Committee on Scientific and Technical Information, Washington, D.C., Federal Council for Science and Technology, 1971. 155p. (COSATI 71-1). Avail. from National Technical Information Service, Springfield, Va. 22151. $3.00 hc; $0.95 mf.

Kortendick, James J. and Elizabeth W. Stone, *Job Dimensions and Educational Needs in Librarianship,* Chicago, American Library Association, 1971. 510p. $14.00.

Schultz, Charles R., *Bibliography of Maritime and Naval History: Periodical Articles During 1970,* Mystic, Conn., Marine Historical Association, Inc., 1971.

Canadian Special Libraries

"The Role of the Special Library" was a feature article in the July-August 1971 issue of *Commercial Letter* of the Canadian Imperial Bank of Commerce, Toronto. The paper presents a history of special libraries and their services in Canada.

Of particular interest are the holdings in Canadian special libraries in 1970. Books and bound periodicals number approximately 13 million; research reports over 2 million; current journal subscriptions nearly 300,000.

Recognition is indeed due **Jane Cooney,** the Bank librarian and SLA member, for her fine effort in publicizing the value of important special library services in Canada.

vistas

Kauai Plans for Space Age Libraries

A Kauai Conference on Interlibrary Cooperation was held on Aug 30, 1971, at the Kauai Regional Library, Hawaii, announced John Hall, Health Educator at the State Health Department's Kauai District Health Office and Conference Chairman.

Conference discussions centered around three areas: 1) Formalizing a structure of interlibrary cooperation among state library, school, Community College, health department and other special collections. 2) Developing a single health science library to serve the needs of the professional health community and the integration of this library into the total cooperative library plan for Kauai. 3) Proposal of a feasibility study for funding by the state of a state-wide regional health science library system.

The planning of this conference was done by the "Committee for Interlibrary Cooperation." Participants included Gail Portwood, Acting Director of the Kauai Regional Library; Mrs. Esther Lundgren, Reference and Adult Librarian at the Kauai Regional Library; Mrs. Kathy Peters, Kauai Community College Librarian; Russell Sus, Director of Multi-Media Center at Kauai High School and Director of the Wilcox Hospital Library; and John Hall, Health Educator at the Kauai District Health Office.

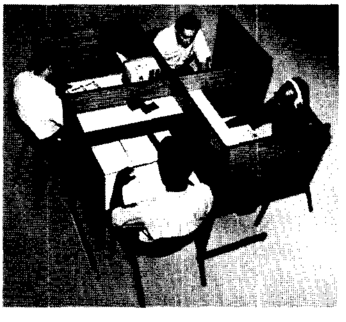
Professionals from many areas were invited to participate in the conference, among them educators, doctors, nurses, dentists, health administrators, and the allied health professions.

Mr. Hall quoted from a statement of The American Association of School, State, College, and Research Librarians to emphasize the need and importance of the conference:

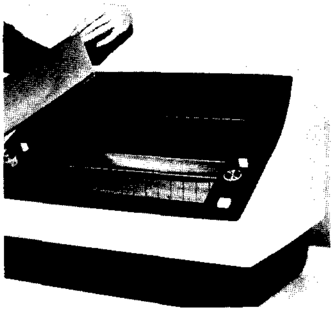
"Changes in American education and culture, resulting in increasing and accelerating reader demands upon libraries, changes in the quantity and variety of published materials, and developments in technological applications for libraries, these plus the rising costs of materials, equipment, and services, have all combined to generate pressures and open opportunities which must be met in new ways.

"No one library can be self-sufficient or satisfy all of the demands made upon it, but libraries acting together can more effectively satisfy user needs and provide total library service."

HAVE YOU SEEN?



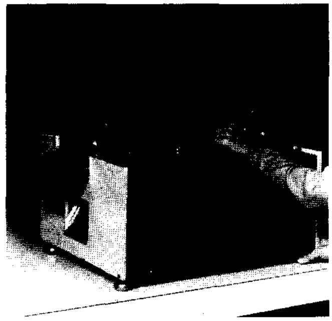
Flexible study carrels that are modular but non-custom can be clustered into various sizes and shapes. Some features that allow this are: no rights or lefts, no special ends, common panels between adjacent positions to eliminate panel doubling. The System 70 is available in 30", 36" and 48" position widths and has the capability for wiring in interconnecting wireways for AC, audio or video cables. For information, contact: Howe Folding Furniture, Inc., 360 Lexington Ave., N.Y. 10017.



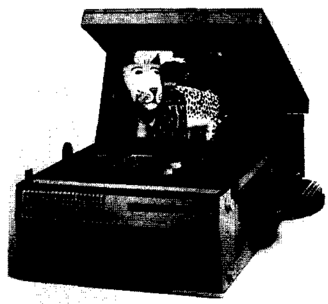
Velo-Binding is a process that is said to produce bound documents in 20 seconds or cased hard-cover books in less than 60 seconds. The system eliminates sewing and gluing in favor of a mechanical device. The equipment can be leased for a minimum of $50 per month. For information: Abildgaard Laboratories, Inc., 857 Maude Ave., Mountain View, Calif. 94040.

A low-cost, low-volume copier accepts books, bulky originals and flat documents up to 8½" × 14". The Model 051 Copier can reproduce originals of all colors and can make transparencies for overhead projectors. The copier, which "is designed for all situations where copy making previously was economically unfeasible" is manufactured by 3M Company, St. Paul, Minn. 55101. Manufacturer's suggested retail price is $179.00.

A high-speed film cutter delivers forty 105 × 148.75 mm microfiche per minute, cut to precise standards within a tolerance of 0.005 in. A photocell sensor automatically activates

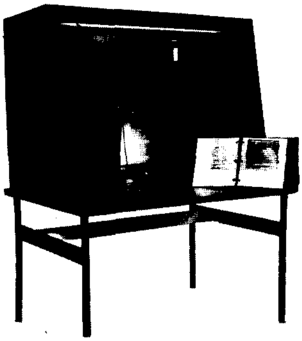


a die cutting mechanism. The unit features scratch-free film transport and automatically ejects and stacks the cut microfiche. The Model 607-101 is available from Image Systems, Inc., 11244 Playa Ct., Culver City, Calif. 90230.



A portable cartridge sound movie projector with stop-motion control can convert from rear screen to front projection. It is equipped with a two-speaker sound system. A heat filter over the lamp prevents film damage. The use of film cartridges eliminates threading and rewinding. For information: Technicolor, Inc., 299 Kalmus Drive, Costa Mesa, Calif. 92627.

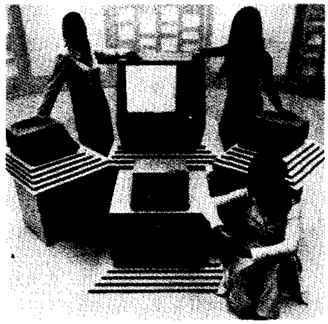
The MicroSearch Carrel was designed to overcome resistance in using microforms. Along with the MicroSearch Cart, which provides mobility, the work stations are planned specifically for microform users. Features include balanced backlighting, flush-mounted indexing control, oversized desk top area, recessed storage area, and modular design.



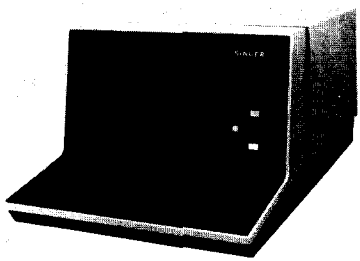
Designed to accept virtually any microform reader or reader/printer, the model is available from Educational Information Services, Inc., 1150 Connecticut Ave., N.W., Suite 74, Washington, D.C. 20036.

A pocket-sized scanner is an illuminating magnifier available with a 5× lens for $3.95 or 10× lens for $4.95. The item is 2″ square, weighs 2 oz. and is in a soft vinyl carrying pouch. It is manufactured by Flex Electric Products, Inc., 40-14 24th St., Long Island City, N.Y. 11101.

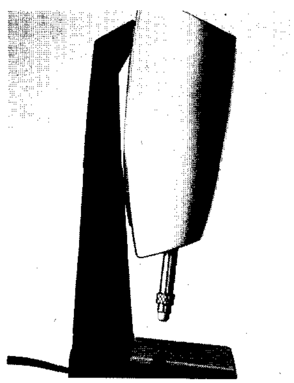
The Miracode II System is an automated information handling system using 16mm microfilm. It is used to retrieve documents randomly filed on microfilm with machine-readable code. The code that identifies the documents, along with the filmed documents, is contained in mocrofilm magazines. The equipment is in two basic groups: 1) input equipment to produce microfilm and coding, and 2) output equipment to locate codes and display the documents. A brochure (A-2014) that describes the system is available from Dept. DP 1033, Eastman Kodak Co., Business



Systems Division, 343 State St., Rochester, N.Y. 14650.



A desktop alphanumeric display terminal is designed to function as a peripheral device for Singer's System Ten business computer. The Model 80 provides the system with a high speed visual data editing capability. It is priced at $5,950 and may also be leased. For information: Friden Division, The Singer Co., San Leandro, Calif. 94557.



A cordless rechargeable electric eraser has been announced. The PONY operates on nickel-cadmium batteries. Three different grades of eraser inserts are supplied. For information: Pierce Corp., 825 Boone Ave. North, Minneapolis, Minn. 55427.

HAVE YOU HEARD?

Graduate Assistantships

The School of Library Science at the University of North Carolina offers Graduate Assistantships (annual stipend $2,600) to students admitted to the MSLS program. Graduate Assistants are scheduled 20 hours of work each week in the library. Applications, which must be filed by Feb 1, may be secured from Jean Freeman, Assistant to the Dean, School of Library Science, University of North Carolina, Chapel Hill, N.C. 27514

Education Directory

The *Directory of Education Programs in Information Science, 1971/72* is the first edition of a proposed annual series listing 91 graduate-level academic programs that include education in information science in the U.S. and Canada. The *Directory* is available from American Society for Information Science, 1140 Connecticut Ave., N.W., Washington, D.C. 20036 for $4.50 members; $5.00 nonmembers.

Conservation Proceedings

The Boston Athenaeum announces the publication of the proceedings of its 1971 Seminar on the Conservation of Library and Archival Materials. The volume is $8.00 from the Library of the Boston Athenaeum, 10½ Beacon St., Boston, Mass. 02108.

Japan Archive

A Japan Documentation Center has been established by the East Asian Institute at Columbia University, N.Y. It is a research archive of important current materials dealing with political, economic and social developments in Japan. The Center employs a staff in Tokyo to collect and ship materials, and another at Columbia for processing and filing.

Industrial Aerodynamics Information

An information service on Industrial Aerodynamics provides current awareness facilities by means of abstract cards, retrospective searching facilities by means of body-punched cards, and the capability to receive copies of original documents. The initial subscription, which includes the literature to date, is £150.00 and thereafter £50.00 per annum, plus a surcharge for overseas subscribers. For details: Mr. M. J. Rowat, I.A.I.S., British Hydromechanics Research Association (BHRA)—fluid engineering, Cranfield, Bedfordshire, England.

Libraries for Minorities

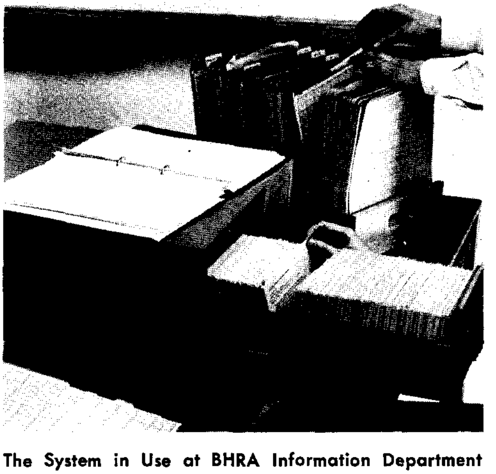
Minority Library Consultants provides technical assistance for libraries and school districts who are establishing programs relating to Blacks, Chicanos and American Indians. Services available include feasibility studies, meetings with key people to determine interest, writing funding proposals, and implementation of programs. Working with the group in the Chicano areas is SLA'er Robert D. Haro, assistant university librarian at the University of Southern California. For information write: Eric V. A. Winston, president, Minority Library Consultants, 5947 Bois Ile Drive, Suite 51, Haslett, Mich. 48840.

U.S. Study for Medical Librarians

The Medical Library Association awards a six-month fellowship for study of medical librarianship in the U.S. for medical librarians from abroad. For information: Dr. Carroll Reynolds, Chairman, MLA Committee on International Cooperation, Falk Library of the Health Professions, University of Pittsburgh, Pittsburgh, Pa. 15213.

Computer Librarianship

A one-year traineeship in computer librarianship is available at the Washington University School of Medicine Library, St. Louis, Missouri. The Traineeship will run Sep 1, 1972–Aug 30, 1973, and no more than four will be available. For information, write Dr. Estelle Brodman at the Library.



The System in Use at BHRA Information Department

New Legislative Library

A legislative reference library for the use of the City Council of the City of New York opened. The library contains virtually every piece of legislation enacted by the Council since 1653. The staff, headed by SLA member Eugene I. Bockman, Director of the Municipal Reference and Research Center, has spent three years assembling the materials.

Microforms in Libraries

The Organization for MicroInformation (OMI), focusing on user problems with microforms, has been designed by the University of Denver. The agency, which is expected to begin operation Jan 1, 1972, will operate for its member library administrators to collaborate in the statement of their own requirements regarding library-related microforms. An operational staff and various panels will be responsible for administering the programs and projects.

Implications of Knowledge

Environment and Society in Transition is the proceedings of an international joint conference of the American Geographical Society and the American Division of the World Academy of Art and Sciences. The conference's purpose was to express "the concern of scientists and the public at large of the social consequences and policy implications of scientific knowledge." The volume is available from the American Geographical Society, Broadway at 156th St., N.Y. 10032 for $30.00.

Micro-Dictionary

The compact edition of the *Oxford English Dictionary* is being published in two volumes. The type has been reduced to one-quarter the regular size and the set is equipped with a magnifier which permits reading at regular size. For information, write: Readex Microprint Corp., 5 Union Square, New York, N.Y. 10003.

Bio-Medical Traineeships

A 13-month program is offered at the Graduate School of Library Science, University of Illinois at Urbana-Champaign, leading to an MS and work as a bio-medical librarian. The next program is June 1972–July 1973. Tuition and fees are waived for the 10 trainees annually and a stipend and dependency allowance are provided. Professor F.W. Lancaster is in charge of the program.

l to r: Solomon Jacobson, Legislative Reference Librarian; Thomas I. Cuite, vice chairman and majority leader, N.Y. City Council; Herbert Birnbaum, Director, legal service bureau, City Council; Bockman.

Theatre Award

Authors, publishers, and members of the Theatre Library Association are invited to submit nominations for the Association's 1971 George Freedley Award which will be presented in the spring. The award honors a work in the field of theatre published in the United States. Nominations are due by Jan 15, 1972 to Louis A. Rachow, The Walter Hampden Memorial Library, 16 Gramercy Park, N.Y. 10003.

COLT Proceedings

The Coming of Age of LTAs is the title of the Proceedings of the Fourth Annual Meeting of the Council on Library Technology, Jun 4–6, 1970. The volume covers various aspects of library technical assistants and is available for $3.00 ($4.50 outside U.S.A.) from COLT, Felician College Library, 3800 Peterson Ave., Chicago, Ill. 60645.

Library News Hotline

"LJ/SLJ Hotline" is a weekly newsletter covering late breaking news and developments in the library world. Slated to begin publication in January, it is expected to provide news within three or four days of the actual event. A single subscription is $50 per year. Order from LJ/SLJ Hotline, R. R. Bowker Co., 1180 Ave. of the Americas, New York, N.Y. 10036. The collect telephone number to call to report news items is 212/581-8800.

Engineering Journal

Midwest Engineer is the official publication of the Western Society of Engineers, and carries society news as well as articles of interest to all types of engineers. The magazine is published Oct–Jun and is available to any organization for $6.00 per year. Order from Midwest Engineer, 314 S. Federal St., Chicago, Ill. 60604.

NAL Resources More Accessible

The National Agricultural Library, Beltsville, Maryland, has installed a Code-a-Phone system which, during daylight hours, will automatically record a message when the Telephone Inquiry lines are busy. The phone number at NAL is 301/345-6200.

Errata

A credit line was omitted from Bill M. Woods' review (*SL*, May/Jun, p.256) of *Map Collections in the United States and Canada: A Directory*. 2d ed. The credit line should read:

> Reprinted in part from *Bulletin* of Geography and Map Division, SLA (no.83): p.63–64 (Mar 1971).

Order information for ERIC/CLIS documents (*SL*, Nov 1971, p.501) should be:

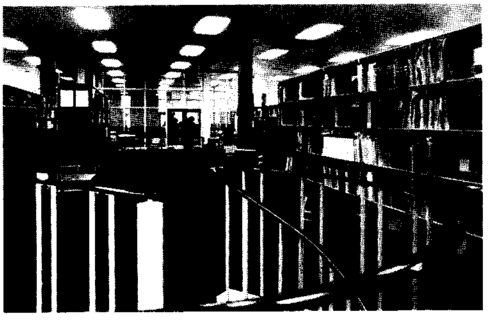
> Unless otherwise specified, documents may be ordered in either microfiche (MF) or hard copy (HC) from: ERIC Document Reproduction Service, LEASCO Information Products, Inc., Post Office Drawer 0, Bethesda, Maryland 20014.
>
> Orders must include ED number and specification of format desired. There is no handling charge, but payment must accompany orders totaling less than $10.00. Book rate or library rate postage is included in the prices. Order blanks containing further information may be obtained from LEASCO Information Products.

Welsh Library

The library media resource centre of the College of Librarianship, Wales, is said to be the first library building in Britain to be designed specifically for librarians.

Access to the various core collections is eased by a minimum of barriers. Specific areas are assigned to Welsh studies, children's literature, and a model reference collection. There are demonstration areas for such activities as library planning and practical cataloging.

The concept behind the library is that it serve at the same time as a study library, a teaching library (with a program of seminars) and a demonstration library to visitors. The library staff will cooperate with the teaching staff in devising new methods and programs. There are also plans to connect the library with the other buildings by closed circuit television and studio systems.



Covering 21,000 sq. ft. on two floors, the library includes housing for 50,000 volumes, display for 500 periodicals and seating for 150 readers. The collections include such related topics as printing and publishing, communication and education in addition to librarianship, information science and bibliography.

PLACEMENT

"Positions Open" and "Positions Wanted" ads are $1.50 per line; $4.50 minimum. Current members of SLA may place a "Positions Wanted" ad at a special rate of $1.00 per line; $3.00 minimum.

In each membership year, each unemployed member will be allowed a maximum of two free "Positions Wanted" ads, each ad to be limited to 5 lines including mailing address (no blind box addresses), on a space available basis.

There is a minimum charge of $10.00 for a "Market Place" ad of three lines or less; each additional line is $3.00. There are approximately 45 characters and spaces to a line.

Copy for display ads must be received by the first of the month preceding the month of publication; copy for line ads must be received by the tenth.

Classified ads will not be accepted on a "run until cancelled" basis; twelve months is the maximum, unless renewed.

Special Libraries Association reserves the right to reject any advertisements which in any way refer to race, creed, color, age, or sex as conditions for employment.

POSITIONS WANTED

Dir. Foundation Libr. Research Center & Museum—10 yrs. exp. in development, administration; upgraded, selected, researched, classified materials; prepared interntl. exhibits. Desires business-related affiliation in NYC. Box C-173.

Librarian—MLS, 16 years' experience, humanities & soc. sciences background, expert cataloger (LC & Dewey), French, German, Spanish, supervisory exper. versatile; wants position in college, university, special library or public library system, Boston area. Box C-178.

Librarian—MLS, female, 15 yrs. varied experience anxious to continue work with FAMULUS or similar software. Any position offering work with computerized library systems considered. Replies by air mail please to: Miss Mary E. Gray, Paget East, Bermuda.

Reference Librarian—Seven years' experience in Nursing School libraries; seeks a position as assistant librarian in a paramedical library. Educational and experience background furnished on request. Prefer work in the central or midwestern states. Request information from Miss Nylah Portlock, 7320 Jefferson, Kansas City, Mo. 64114.

Librarian—Exp. in most types libraries in cat., ref. & admin.; also rare books, mss., local history & genealogy. MSLS & MA history & MA fine arts. Available Jan 1972. R. B. Clark, 4201 S. 31st St. #545, Arlington, Va. 22206.

POSITIONS OPEN

Head Librarian—MLS, some administrative experience in a community or technical college highly desirable; some knowledge of instructional and communications media; flexibility and ability to adapt to technical education and educational innovation; technically oriented person preferred. Salary, $12,600–$16,700. Open July 1972. Apply: E. H. Sessions, Director, Chattanooga State Technical Institute, 4501 Amnicola Highway, Chattanooga, Tennessee 37406.

Assistant Librarian—Prefer MLS grad with background in science/engineering, interest in documents and serials; salary range up to approx. $11,000; good status and fringe benefits. Send résumé to Mrs. L. B. Peck, Librarian, Montana College of Mineral Science and Technology, Butte, Montana 59701.

Area Reference Resource Librarian—With at least two years business reference experience. Salary $12,000.00. Vacation 18 working days. Reply to Box C-177.

POSITIONS OPEN

Cataloger—Southern Illinois University's new School of Medicine Library, Springfield, Ill. Faculty status, salary $9,000 up. NLM and LC classification necessary. Write to: Ann Howard, Medical Librarian, Southern Illinois University School of Medicine Library, 421 · S. 6th St., Springfield, Ill. 62701.

THE MARKET PLACE

Quick Translations—French, German translated into English by technically trained personnel. Efficient, confidential, accurate work. Quick-Trans, 11197 Clinton St., Elma, N.Y. 14059. Tel. (716) 684-7168.

Foreign Books and Periodicals—Specialty: International Congresses. Albert J. Phiebig Inc., Box 352, White Plains, New York 10602.

Back Issue Periodicals—Scientific, Technical, Medical and Liberal Arts. Please submit want lists and lists of materials for sale or exchange. Prompt replies assured. G. H. Arrow Co., 4th & Brown Sts., Philadelphia, Pa. 19123.

CORPORATE LIBRARIAN

Professional opportunity for an experienced librarian to plan, develop and manage a corporate library, incl. engineering, legal and financial areas, located in new general office complex. The position is with a rapidly growing power company serving the Gulf Coast and Central area of Fla. Master's in Library Science required, 3 to 5 years' minimum experience in a special library. Electric utility preferred; however, scientific or legal library would be acceptable.

Salary: $9,000–11,000 annual. Send detailed resume to M. R. McCain, Florida Power Corporation, P.O. Box 14042, St. Petersburg, Fla. 33733.

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Instructions for Contributors

General Information

Special Libraries publishes material on all important subject areas and on all methods and techniques for "Putting Knowledge to Work." New and developing areas of librarianship, information science and information technology are sought. Informative papers on the administration, organization and operation of special libraries and information centers are solicited. Scholarly reports of research in librarianship, documentation, education, and information science and technology are appropriate contributions. Bibliographies and bibliographic essays, discussions and opinions that are intended to be authoritative or that reflect original research are also published. Professional standards, salary information, education, recruitment and public relations are other representative subjects for inclusion. Controversy is not shunned.

As the official journal of the Association, *Special Libraries* also publishes reports of business of the Association and its subunits, as well as news of its members and for its members.

Contributions are solicited from both members and non-members. All papers submitted are considered for publication. Papers are accepted with the understanding that they have not been published, submitted, or accepted for publication elsewhere. *Special Libraries* employs a reviewing procedure in which manuscripts are sent to three reviewers for comment. When all comments have been received, authors will be notified of acceptance, rejection or need for revision of their manuscripts. The review procedure will usually require a minimum of six weeks.

Types of Contributions. Three types of ***original*** contributions are considered for publication: full-length articles, brief reports or communications, and letters to the editor. New monographs and significant report publications are considered for critical review. Annotations of the periodical literature as well as annotations of new monographs and reports are published—especially those with particular pertinence for special libraries and information centers.

Editing. Manuscripts are edited primarily to improve the effectiveness of communication between the author and his readers. The most important goal is to eliminate ambiguities. In addition, improved sentence structure often permits the readers to absorb salient ideas more readily. If extensive editing is indicated by reviewers, with consequent possibility of altered meanings, manuscripts are returned to the author for correction and approval before type is set. Authors are free to make additional changes at this stage.

Proofs. Authors receive galley proofs with a maximum five-day allowance for corrections. One set of galley proofs or an equivalent is provided for each paper. Corrections must be marked on the galley, not on the manuscript. At this stage authors must keep alterations to a minimum; extensive author alterations will be charged to the author. Extensive alterations may also delay publication by several issues of the journal.

Reprints. Order blanks for reprints are sent with most proofs. Special arrangements can be made to obtain reprints of letters and book reviews.

Manuscripts

Organize your material carefully, putting the significance of your paper or a statement of the problem first, and supporting details and arguments second. Make sure that the significance of your paper will be apparent to readers outside your immediate field of interest. Avoid overly specialized jargon. Readers will skip a paper which they do not understand.

For each proposed paper, one original and three copies (in English only) should be mailed to the Editor, *Special Libraries,* 235 Park Avenue South, New York 10003. The manuscript should be mailed *flat* in an envelope of suitable size. Graphic materials should be submitted with appropriate cardboard backing or other stiffening materials.

Style. Follow a good general style manual. The University of Chicago Press ***Manual of Style,*** the style manual of the American Institute of Physics, and the ***Style Manual for Biological Journals*** (published by the American Institute of Biological Sciences), among others, are appropriate.

Format. All contributions should be typewritten on white bond paper on one side only, leaving 1.25 inches (or 3 cm) of space around all margins of standard, letter-size (8.5 × 11 inch) paper. Double spacing must be used throughout, including the title page, tables, legends, and references. The first page of the manuscript should carry both the first and last names of all authors, the institutions or organizations with which the authors are affiliated, and a notation as to which author should receive the galleys for proofreading. All succeeding pages should carry the last name of the first author in the upper right-hand corner and the number of the page.

Title. Begin the title with a word useful in indexing and information retrieval. The title should be as brief, specific, and descriptive as possible.

Abstract. An informative abstract of 100 words or less must be included for full-length articles. The abstract should amplify the title but should not repeat the title or phrases in it. Qualifying words for terms used in the title may be used. The abstract should be typed with double spacing on a separate sheet.

Acknowledgments. Credits for financial support, for materials and technical assistance or advice may be cited in a section headed "Acknowledgments," which should appear at the end of the text. General use of footnotes in the text should be avoided.

Illustrations. Finished artwork must be submitted to *Special Libraries.* Follow the style in current issues for layout and type faces in tables and figures. A table or figure should be constructed so as to be completely intelligible without further reference to the text. Lengthy tabulations of essentially similar data should be avoided.

Figures should be lettered in black India ink. Charts drawn in India ink should be so executed throughout, with no typewritten material included. Letters and numbers appearing in figures should be distinct and large enough so that no character will be less than 2 mm high after reduction. A line 0.4 mm wide reproduces satisfactorily when reduced by one-half. Graphs, charts, and photographs should be given consecutive figure numbers as they will appear in the text. Figure numbers and legends should not appear as part of the figure, but should be typed double spaced on a separate sheet of paper. Each figure should be marked *lightly* on the back with the figure number, author's name, complete address, and shortened title of the paper.

For figures, the originals with three clearly legible reproductions (to be sent to reviewers) should accompany the manuscript. In the case of photographs, four glossy prints are required, preffferably 8 × 10 inches.

References and Notes. Number all references to the literature and notes in a single sequence in the order in which they are cited in the text. Cite all references and notes but do not insert reference numbers in titles or abstracts.

Accuracy and adequacy of the references are the responsibility of the author. Therefore, literature cited should be checked carefully with the original publications. References to personal letters, abstracts of oral reports, and other unedited material may be included.

References to periodicals should be in the order: authors, article title, unabbreviated journal name, volume number, issue number, inclusive pagination, and date of publication.

Smith, John, Jones, B. H. and Doe, Richard. Special Librarianship in Action. *Special Libraries,* 59 (no. 10): 1214-21 (Dec 1968)

References to books should be in the order: authors, title, city, publisher, year, pagination.

Brown, Abel. *Information at Work.* N.Y., Abracadabra Press, 1909. 248p.

Full-Length Articles

Articles may range in length from about 1,000 words to a maximum of 5,000 words (up to 20 typed double spaced manuscript pages). Provide a title of one or two lines of up to 35 characters plus spaces per line.

Insert subheads at appropriate places in the text, averaging about one subhead for each two or three manuscript pages. Keep the subheads short (up to 35 characters plus spaces). Do not use more than one degree or level of subheads in an article. Provide a summary at the end of the article.

Write a brief author note, and include position title and address. In the author note, include information concerning meetings, symposia, etc. where the paper may have been presented orally. Also submit recent glossy black-and-white photographs of the authors.

Brief Communications

Short reports or communications will usually be less than 1,000 words in length (up to 4 typed double spaced manuscript pages). List the authors on the last page of the text in the form of a signature and include a simple mailing address.